Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 2 and 25 to Implement	)	IB Docket No. 99-67
the Global Mobile Personal Communications	)	
by Satellite (GMPCS) Memorandum	)	
of Understanding and Arrangements	)	
	)	
Petition of the National Telecommunications and	)	RM No. 9165
Information Administration to Amend Part 25 of the	)	
Commission's Rules to Establish Emission Limits for	)	
Mobile and Portable Earth Stations Operating in the	)	
1610-1660.5 MHz Band	)	

SECOND REPORT AND ORDER

Adopted: November 6, 2003 **Released: November 18, 2003**

By the Commission:

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I. INTRODUCTION

1. In this Order we adopt rules and policies pertaining to portable "GMPCS" transceivers – *i.e.*, satellite telephones and other portable transceivers operated by end users for communication via direct radio links with satellites.[1] These devices are used for both voice and data communication and may be used for internet access or other modes of broadband communication. We adopt rules pertaining to test-based equipment authorization, importation either for commercial purposes or personal use, responsibility for unauthorized operation, and out-of-band emissions.

2. First, as proposed in the initial Notice of Proposed Rulemaking in this proceeding,[2] we adopt a rule that will require interested parties[3] to obtain equipment authorization pursuant to the certification procedure in Part 2 of the Commission's rules. The Part 2 certification procedure requires submission of an application and exhibits to the Commission, including test data showing that a representative sample unit of the devices that would be covered by the certification meets the Commission's applicable technical requirements. Devices subject to this requirement may not be sold or leased, offered for sale or lease, or imported, shipped, or distributed for sale or lease in the United States prior to grant of a pertinent certification application. The requirement will apply to devices imported, sold, leased, shipped, or distributed after November 19, 2004. This new certification requirement for portable GMPCS transceivers will help to prevent interference, will reduce radio-frequency ("RF") radiation exposure risk, and will make regulatory treatment of portable GMPCS transceivers consistent with treatment of similar terrestrial wireless devices, such as cellular phones. We also revise several rule provisions to place appropriate legal responsibility for unauthorized transceiver operation on the parties that control access to GMPCS networks and to eliminate redundant information-filing requirements.

3. The rules that we adopt allow travelers to carry a limited number of GMPCS transceivers that have not been certificated under Part 2 into the United States as personal effects. Travelers may lawfully

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[1] "GMPCS" is an acronym for "Global Mobile Personal Communications by Satellite." Although it includes the adjectives "global" and "mobile," this term does not pertain only to communication services provided by satellite systems with global coverage to users with mobile terminals. Rather, "GMPCS" has consistently been defined as comprehensively referring to all communication services provided directly to end users by *any* satellite system (global or otherwise), regardless of whether the users' terminals are mobile or fixed. *See 1998 Biennial Regulatory Review – Amendment of Parts 2, 25, and 68 of the Commission's Rules to Further Streamline the Equipment Authorization Process for Radio Frequency Equipment, Modify the Equipment Authorization Process for Telephone Terminal Equipment, Implement Mutual Recognition Agreements and Begin Implementation of the Global Mobile Personal Communications by Satellite (GMPCS) Arrangements* (Report and Order), FCC 98-338, 13 FCC Rcd 24687 (1998) ("*Equipment Authorization Streamlining Order*") at n.2; 14 FCC Rcd 5871 (1999), at n.1 and Appendix A; and *Arrangements Pursuant to the GMPCS MoU to Facilitate the Introduction and Development of Global Mobile Personal Communications by Satellite (GMPCS), as agreed at the Third Meeting of Signatories and Potential Signatories of the GMPCS-MoU*, Document 14-E (Oct. 7, 1997) ("GMPCS-MoU Arrangements"), at Section IV (defining "GMPCS System" as "[a]ny satellite system (i.e., fixed or mobile, broadband or narrow-band, global or regional, geostationary or non-geostationary, existing or planned) providing telecommunication services directly to end users from a constellation of satellites" and defining "[c]onstellation of satellites" as "[o]ne or more satellites … operated as a system").

[2] Notice of Proposed Rulemaking, FCC 99-37, 14 FCC Rcd 5871 (1999) ("*NPRM*").

[3] Although certification is a prerequisite for domestic sale or lease and importation, manufacture, shipment, or distribution for domestic sale or lease, the new certification rule for portable GMPCS transceivers does not limit eligibility to apply for certification to parties proposing to engage in those activities. Hence a service provider or system operator with no intention of selling, leasing, manufacturing, shipping, or distributing terminal equipment could apply for, and receive, certification for such devices.

operate such uncertificated transceivers in this country if such operation is authorized under a blanket earth-station license issued by this Commission to a satellite service provider. These policies are in accordance with recommendations for regulatory policies to facilitate global circulation of GMPCS transceivers that delegates from the United States and many other countries endorsed under the auspices of the 1996 World Telecommunication Policy Forum.[4]

4. In addition to adopting rules pertaining to equipment authorization and importation of portable earth-station transceivers, we are amending the rule section that prescribes limits on emissions from Mobile Satellite Service transceivers in the 1559-1610 MHz band.[5] In light of comments filed in response to a Further NPRM released last year in this proceeding,[6] we prescribe several additional limits on such out-of-band emissions, specify measurement techniques, and set compliance deadlines for Inmarsat maritime transceivers. These rule changes improve interference protection for aeronautical radio-navigation.

II. BACKGROUND

A. The GMPCS MoU and the ITU's GMPCS Registry

5. The rules we are adopting with respect to equipment authorization and importation are generally consistent with the objectives identified in a Memorandum of Understanding pertaining to regulation of GMPCS terminals ("GMPCS MoU") signed in 1997.[7] The GMPCS MoU was an outgrowth of the 1994 Plenipotentiary Conference of the International Telecommunication Union ("ITU"),[8] which adopted a resolution to convene a policy forum to address regulatory issues raised by the impending introduction of GMPCS services. Pursuant to this resolution, the first ITU World Telecommunication Policy Forum was held in Geneva in October 1996, attended by government officials from the United States and 127 other ITU Member States and representatives from a variety of non-governmental organizations. Delegates representing satellite operators, equipment manufacturers, service providers, and potential users maintained that the success of GMPCS services would depend on users' ability to carry GMPCS handsets across international boundaries. On the other hand, many of the governmental delegates stressed the importance of preserving national sovereignty and preventing use of GMPCS systems to bypass their national public switched networks. Participants recognized that the possible need for equipment to be approved individually in every country where service might be provided could substantially hinder development of GMPCS.

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[4] *See infra* ¶¶ 4-8.

[5] 47 C.F.R. § 25.216. The limits prescribed in this rule section on emissions in the 1559-1610 MHz band were developed on the basis of an aviation precision approach landing interference scenario and were not intended to be applied to devices other than mobile-satellite service mobile earth-station terminals operating in the 1-3 GHz frequency range without further study.

[6] Report and Order and Further Notice of Proposed Rulemaking, FCC 02-134, 17 FCC Rcd 12,941 (2002).

[7] *Memorandum of Understanding to Facilitate Arrangements for Global Mobile Personal Communications by Satellite, Including Regional Systems (GMPCS-MoU)* (Geneva, 18 Feb. 1997).

[8] The ITU is a United Nations agency responsible for the global oversight and implementation of international telecommunications policy. The ITU derives its authority from a multilateral treaty to which the United States is a party.

6. The Policy Forum concluded that national administrations should develop harmonious policies to facilitate introduction of GMPCS services. To encourage this, the Forum's chairman asked the ITU Secretary General to convene an Informal Group of governmental officials and other parties to draft a Memorandum of Understanding containing recommendations for type approval, licensing, marking, provision of traffic data, and customs regulations to facilitate free circulation of GMPCS terminals.[9]

7. The Informal Group drafted the GMPCS MoU in the following year and submitted it to the Secretary General. The MoU identifies two primary objectives. One of these primary objectives is implementation of regionally or globally coordinated rules allowing travelers to carry GMPCS terminals across international boundaries and to use them consistently with regulatory requirements in visited countries without having to obtain individual licenses for such operation from officials of those countries. The second primary objective is implementation of rules permitting travelers to carry GMPCS terminals across international boundaries for transit through visited countries where they *cannot* be operated in compliance with local requirements. In the interest of facilitating attainment of these overall objectives, the MoU signatories pledged to devise and promote implementation of specific regulatory proposals with respect to the following matters:

- national "type approval" (*i.e.*, equipment authorization) of GMPCS terminals based on technical standards consistent with relevant ITU Recommendations;
- mutual recognition of such type approval;
- marking of type-approved GMPCS terminals to facilitate mutual recognition;
- blanket licensing, rather than individual licensing, for GMPCS terminals;
- exemption of GMPCS terminals from customs restrictions when brought into a country on a temporary basis; and
- requirements for GMPCS operators to provide data on request to governmental officials to help them identify unauthorized traffic originating in or routed to their national territory.

To date, government officials from the United States and 78 other ITU member states have signed the GMPCS MoU.

8. The Informal Group also drafted a set of specific proposals entitled "Arrangements Pursuant to the GMPCS MoU."[10] Among other things, the GMPCS Arrangements specified an optional registration and marking procedure to facilitate mutual recognition of equipment authorization. The Arrangements are merely advisory in nature; they are not in the form of an agreement, are not signed, and are not incorporated by reference in the GMPCS MoU. The ITU Council directed the Secretary General to administer the registration procedure proposed in the Arrangements, however, and approved use of an ITU-GMPCS logo for identifying registered terminals.[11]

9. The registration procedure, which has been operational since 1998, involves several steps. First, a GMPCS system operator sends an Implementation Letter to the ITU Secretary General – describing the system, listing the terminal types to be used with it, identifying the terminal manufacturers and any associated service providers, specifying the geographical area(s) where the service will be provided, and identifying a governmental agency that has type-approved the terminals for entry and use in the territory within its jurisdiction. Next, the terminal manufacturers submit letters identifying the technical standards with which the type approval agency found the terminals in compliance. Then the

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[9] *See Final Report of the World Telecommunications Policy Forum*, Geneva, 1996 (ITU 1997).

[10] Memorandum of Understanding-GMPCS (Geneva, 6-7 October 1997), Document 14-E ("GMPCS Arrangements").

[11] *ITU Council Resolution 1116* (May 28, 1998).

type-approval agency (*e.g.*, in the United States, the FCC) must submit confirmation to the Secretary General that it has granted authority for entry and use of the terminals in question – listing the relevant requirements, explaining how compliance was verified, identifying the manufacturer(s), listing the model numbers or similar identifying information for the terminals, specifying the date when type approval was granted, and stating what, if any, approval mark is placed on the terminals. Upon receiving all of this correspondence, the Secretary General notifies the manufacturers that they may mark the devices with an "ITU GMPCS-MoU Registry" logo. The logo signifies that type acceptance of the marked devices has been registered pursuant to this procedure. Upon request from the system operator, the Secretary General will announce the registration to regulatory authorities in national administrations designated as signatories to the GMPCS MoU and ask them whether the registered terminals may be carried into their territories and, if so, what restrictions would govern their use therein. Written responses to such inquiries are kept in the ITU's GMPCS registry files.

10. ITU GMPCS registration can be obtained based on type approval to any country's technical standards and does not necessarily ensure that the registered devices meet technical requirements for entry and/or operation in any other country. Thus ITU GMPCS registration does not necessarily guarantee compliance with the FCC's pertinent technical standards. Such registration serves to facilitate transportation of GMPCS terminals into countries that do not administer a testing process for equipment authorization, however.

B. Mutual Recognition Agreements

11. The Executive Branch of the U.S. government has more recently implemented another means of facilitating inter-governmental recognition of equipment authorization. The United States Trade Representative and the U.S. Department of Commerce, with the FCC's support, negotiated a series of regional mutual recognition agreements ("MRAs"), which were signed in 1998 and 1999.[12] Unlike the GMPCS MoU and Arrangements, which are non-binding recommendations, the MRAs are mutually obligatory agreements between national administrations.

12. The first of these MRAs established a framework for mutual recognition of test-based equipment authorization of various kinds of products, including GMPCS transceivers, by agencies of the U.S. government and the governments of member states of the European Community.[13] The U.S./EC MRA declares that the U.S. government and the EC governments have reciprocal obligations to accept equipment authorization assessments. Thus, products manufactured in the United States can be tested in the United States for conformance with EC member states' technical requirements, and if found in conformance with such requirements by the U.S. assessment agency the products can be exported to those countries without any further testing or authorization. In return, the MRA obligates U.S. government agencies to accept equipment authorization to their requirements performed in Europe by assessment agencies designated by the EC member states. These reciprocal obligations apply to all radio-frequency transmitters subject to U.S. or EC equipment authorization requirements, including earth-station transceivers.[14] The Agreement includes a proviso that allows the U.S. or the EC to suspend compliance in

[12] The execution of the MRAs fulfilled obligations established by an agreement on technical barriers annexed to the treaty that established the World Trade Organization. *See* WTO Agreement on Technical Barriers to Trade, Article 6.

[13] Agreement on Mutual Recognition Between the United States of America and the European Community ("U.S./EC MRA").

[14] *Id.*, Sectoral Annex for Telecommunication Equipment, Section II, ¶1(c) and Section III, ¶2.

the event of a material breach by the other party and specifies procedures for monitoring the performance of designated assessment agencies and resolving disputes as to their competence. The Executive Branch has also negotiated single-sector MRAs with the Asian Pacific Economic Cooperative (APEC) and the International Commission for Telecommunications (CITEL) of the Organization of American States that provide for mutual exchange of test data and product approvals of telecommunications equipment.[15] The APEC and CITEL MRAs afford essentially the same benefits for participants as the US-EU MRA.

13. The Commission accordingly revised its rules in 1998 to provide for acceptance of determinations of compliance with its equipment standards performed by assessment agencies designated by foreign governments pursuant to MRA terms and conditions.[16] The Commission said, however, that to ensure parity for U.S. manufacturers it would not accept compliance determinations performed in another country pursuant to an MRA until that country's government accepts compliance determinations performed in the United States.[17] A number of foreign compliance-assessment agencies have since been designated under the terms of one of the MRAs, with this Commission's concurrence, for certification of foreign-made products pursuant to Part 2 of the rules.[18]

C. FCC Regulation of Importation and Marketing of Radio Frequency Devices

1. Statutory Authority

14. The authors of the GMPCS Arrangements acknowledged the sovereign right of national administrations to adopt technical standards for radio transmitters, to establish procedures for assessing conformance with those standards, and to bar importation of non-conforming devices.[19] The FCC has performed such regulatory functions pursuant to authority delegated in Section 302 of the Communications Act.[20] Subsection 302(a) provides that the Commission may adopt regulations pertaining to the interference potential of radio-frequency devices that apply to manufacture, importation, sale, offer for sale, or shipment of such devices. Subsection 302(b) prohibits the manufacture, importation, sale, offer for sale, or shipment of devices that do not comply with such FCC regulations. Congress enacted these provisions to enable the Commission to prevent radio-emitting devices that do not meet the standards it prescribes for prevention of interference from being placed on the market in the United States.[21]

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15 *See Equipment Authorization Streamlining Order*, *supra*, at ¶¶ 57-58.

16 *Id*.

17 *Id.* at ¶56.

18 *See* Public Notice, *European Conformity Assessment Bodies accepted to Certify or Test Radiofrequency and Telephone Terminal Equipment in Accordance with the Terms of the US-EU Mutual Recognition Agreement*, DA 01-180 (rel. Jan. 25, 2001).

19 GMPCS Arrangements, Sect. III ¶1 and Sect. V ¶¶ 6, 11, and 14.

20 47 U.S.C. § 302.

21 Prior to the enactment of Section 302, the Commission's only means of enforcing transmitter performance standards was to institute license-revocation or cease-and-desist proceedings, in which it bore the burden of proof. This was largely ineffectual, as it did not allow remedial action to be taken prior to the occurrence of interference and because sources of interference could not always be identified. The exclusive focus on violations by users was inequitable, moreover, as in many instances those using non-compliant devices had purchased them in good faith, assuming that they had been designed to operate in accordance with FCC (continued….)

2. Importation and Marketing Rules

15. In exercise of its authority under Section 302, the Commission has adopted rules pertaining to importation and marketing of radio-frequency devices.[22] The regulations governing importation and marketing are set forth in Sections 2.803 and 2.1204 of the Commission's rules, which apply by their terms to radio emitters and transmitters of every kind, including GMPCS transceivers.[23] Subsection 2.803(a) states, in essence, that no one may "sell or lease, or offer for sale or lease … or import, ship, or distribute for the purpose of selling or leasing or offering for sale or lease" any radio-frequency device (*i.e.*, "any device … capable of emitting radio-frequency energy") unless: (1) the device has been authorized pursuant to the "certification" procedure for equipment authorization specified in Part 2, Subpart J and is labeled as required by Section 2.925, or (2) the device is not subject to such an authorization requirement and meets all applicable technical and administrative requirements in the Commission's rules.[24] The Commission's principal rule pertaining to importation is stated in Subsection 2.1204(a): devices subject to mandatory equipment authorization under Part 2 may be imported only if they have been so authorized, and devices not subject to such an equipment authorization requirement may be imported if they meet all applicable technical and administrative requirements in the Commission's rules.[25] Subsection 2.1204(a) also specifies a series of exceptions similar to those in Subsections 2.803(b)-(f), including an exception for devices imported only for export. Unlike the provision pertaining to importation in Subsection 2.803(a), the restriction in Subsection 2.1204(a) applies to importation for *any* purpose, not just importation for sale or lease.

3. Certification

16. Part 2, Subpart J of the Commission's rules specifies three different test-based procedures for ensuring that radio-frequency devices can be operated in compliance with applicable technical requirements: verification, declaration of conformity, and certification. The procedures for verification and declaration of conformity require equipment manufacturers, sellers, or importers to ascertain through testing of sample units that the subject devices conform to the applicable technical requirements in the FCC's rules but do not require them to submit test data to the Commission or obtain its approval before importing the devices or placing them on the market in the United States.

17. The certification procedure, on the other hand, requires test data and other relevant information to be submitted for evaluation in an application to the Commission or to a Telecommunication Certification Body ("TCB") designated by the Commission or by a foreign regulatory authority pursuant to an MRA to which the United States is a party.[26] The Commission (or

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regulations. Congress added Section 302 to the Communications Act in 1968, after representatives of the FCC, other Federal agencies, and private-sector organizations called these problems to its attention. See S. Rep. 90-1276, 1968 U.S.C.C.A.N. 2486.

[22] *See Amendment of Part 2 of the Commission's Rules to Prescribe Regulations Governing the Sale or Import or Shipment for Sale, of Devices Which Cause Harmful Interference to Radio Communication* (Report and Order), FCC 70-506, 19 RR2d 1554 (1970).

[23] 47 C.F.R. §§ 2.803 and 2.1204.

[24] 47 C.F.R. § 2.803(a). There are some exceptions. Section 2.807 stipulates that devices manufactured only for export or for use by the U.S. government are exempt from the restrictions in Section 2.803(a), for instance, and other narrow exceptions are set forth in Paragraphs (b) through (f) of Section 2.803.

[25] 47 C.F.R. § 2.1204(a).

[26] To be eligible for designation as a domestic TCB, a private-sector testing laboratory must be accredited by the National Institute of Standards and Technology ("NIST") or by a NIST-approved accrediting (continued….)

TCB) will grant an application for certification if it finds from examination of the application and test data that the devices can be operated in compliance with applicable technical requirements, including limits prescribed to protect operators from hazardous RF radiation exposure, and that a grant would serve the public interest.[27] Each device subject to certification must be etched, engraved, or permanently labeled with an identification number, preceded by the term "FCC ID."[28] The grantee warrants that the data filed with the certification application will be representative of subsequently-manufactured units bearing the assigned FCC identification number[29] and may be required to submit a sample from subsequently-manufactured units to the Commission for testing.[30]

18. *Previously-established Certification Requirements.* The Commission has required most terrestrial wireless transceivers, including cellular and PCS phones, to be certificated under Part 2, Subpart J.[31] The Commission has also established certification requirements, or similar equipment authorization requirements, for earth-station transmitters installed in ships and aircraft.[32] Earlier this year, the Commission adopted rules that also made Part 2 certification mandatory for one type of land-based earth-station transceivers. In the *ATC Report and Order*,[33] in which the Commission revised its rules to make it possible for Big LEO, L-Band, and 2 GHz Mobile Satellite Service ("MSS") licensees to obtain authority for ancillary terrestrial components ("ATC"), the Commission said that both components of dual-mode terminals incorporating MSS earth-station transceivers and ATC transceivers must be certificated under Part 2, Subpart J.[34] The Commission explained that it was requiring certification for ATC transceivers and dual-mode MSS/ATC terminals for the sake of consistency with authorization requirements for cellular and PCS terminals and in order to ensure compliance with technical requirements for prevention of interference and protection of operator safety.[35]

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agency. TCBs may be designated by foreign authorities pursuant to an MRA to conduct certification assessment in an MRA partner economy pursuant to the FCC's rules. *See* 47 C.F.R. §§ 2.960 and 2.962.

[27] 47 C.F.R. § 2.915(a). Mobile and portable earth-station transmitters licensed under Part 25 of the Commission's rules must meet RF exposure requirements specified in Part 2 of the rules. *See* 47 C.F.R. §§ 2.1091 and 2.1093.

[28] 47 C.F.R. §§ 2.926 and 2.927(a).

[29] 47 C.F.R. § 2.931.

[30] 47 C.F.R. § 2.945.

[31] *See* 47 C.F.R. § 22.377 (requiring Public Mobile Service transmitters to be certificated, except those operating under a developmental authorization); 47 C.F.R. § 24.51 (requiring certification of Personal Communication Services transmitters); 47 C.F.R. § 27.51 (requiring certification of Miscellaneous Wireless Communications Services transmitters); 47 C.F.R. § 80.203 (requiring certification of maritime-service transmitters, with narrow exceptions); 47 C.F.R. §§ 87.145 and 87.147 (requiring certification of Aviation Services transmitters); 47 C.F.R. § 90.203 (requiring certification of Private Land Mobile Radio Service transmitters); and 47 C.F.R. § 95.603 (requiring certification of Personal Radio Service transmitters).

[32] *See* 47 C.F.R. §§ 80.203(g), 80.1103(a), 87.145, and 87.147.

[33] *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands* (Report and Order and Notice of Proposed Rulemaking), FCC 03-15, 18 FCC Rcd 1962 (2003).

[34] *Id.* at ¶248.

[35] *Id.* Accordingly, the Commission adopted a new rule provision, 47 C.F.R. § 25.147(c), stating that "[e]ach ATC MET utilized for operation … [or] marketed … must be of a type that has been authorized by the Commission under its certification procedure …." The Commission said in ¶248 of the *ATC Report and* (continued….)

19. The Commission has not previously required land-based earth-station transmitters (other than dual-mode ATC/MSS transceivers) to be certificated under Part 2.[36] *I.e.*, the Commission has not previously required any type of earth-station transmitter to be certificated aside from dual-mode MSS/ATC transceivers and ship and aircraft earth stations subject to regulation under Parts 80 and 87 of the rules. Section 25.133 of the Commission's rules requires earth-station licensees to certify that their transmitters have been tested and found within 2 dB of emission limits specified in other sections.[37] Unlike the certification rules in Part 2, however, Section 25.133 does not require submission of test data and does not require any equipment authorization to be obtained prior to importation, distribution, sale, or offer for sale.

20. *Optional Certification of GMPCS Terminals.* In 1998, the Commission adopted Section 25.200, which states that certification pursuant to Part 2, Subpart J can be obtained for GMPCS terminals for which an FCC blanket license has been granted.[38] Unlike the previously-adopted certification rules for terrestrial wireless, maritime, and aircraft transmitters, Section 25.200 does not *require* certification prior to importation, commercial distribution,, sale, or offer for sale. Rather, Section 25.200 merely provides for optional certification at the election of interested parties. The purpose of Section 25.200 is not to prevent importation or marketing of noncompliant transmitters but simply to enable manufacturers or service providers to meet the prerequisites for labeling licensed GMPCS terminals with the FCC Identifier and/or the ITU GMPCS Registry logo, pursuant to the registration process described above in Paragraph 9, in order to facilitate exportation or transportation of the devices into other countries.[39] The Commission said that it was instituting the optional certification procedure as an interim measure pending "full implementation" of the recommendations in the GMPCS MoU.[40]

4. NPRM Proposals

21. In the initial NPRM in this proceeding, the Commission proposed a mandatory equipment certification rule for GMPCS terminals. The proposed rule would require certification to be obtained pursuant to Part 2, Subpart J for GMPCS terminals prior to sale or lease of the devices in the United States or importation, shipment, or distribution for sale or lease in the United States.[41] The Commission's stated rationale was that such a requirement was necessary to minimize interference and RF exposure risk, to facilitate enforcement by establishing a means of readily distinguishing rule-compliant devices from non-compliant devices, and to make regulatory treatment of GMPCS terminals consistent with treatment of functionally-similar end-user transceivers that were already subject to certification requirements.[42]

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Order that it was also revising 47 C.F.R. § 25.115(d) to make it clear that mobile earth-station terminals for systems with ATC must be certificated, but that intention is not reflected in the appendix setting forth the adopted rule changes. *See id.* at Appendix B.

[36] Earth stations that transmit in the C- or Ku-band are subject to a test-based *verification* requirement established by 47 C.F.R. § 25.132(a) but are not required to be certificated.

[37] 47 C.F.R. § 25.133; *see also* 47 C.F.R. § 25.132 (prescribing testing requirement for C-band and Ku-band earth-station transmitters).

[38] 47 C.F.R. § 25.200. *See Equipment Authorization Streamlining Order*, *supra*.

[39] *Id.* at ¶69.

[40] *Id.* at ¶¶ 69 and 75. The origin and content of the GMPCS Memorandum of Understanding are discussed in the next section of this report and order.

[41] Notice of Proposed Rulemaking, FCC 99-37, 14 FCC Rcd 5871 (1999).

[42] *Id.* at ¶24.

22. The Commission proposed to allow international travelers to carry uncertificated GMPCS terminals into the United States for purposes other than sale or lease if the devices are marked with the ITU GMPCS Registry logo.[43] The Commission proposed to allow travelers to use such uncertificated devices in the United States, moreover, if such operation would be permissible under the terms of an FCC blanket license.[44] The Commission said that it would expect system operators to deny access to GMPCS terminals that could not be operated in compliance with the Commission's rules and under the terms of pertinent blanket licenses and would hold licensees accountable for infractions arising from unauthorized operation of such devices.[45]

23. The Commission received numerous public comments in response to these proposals and has also solicited comments from the U.S. Customs Bureau, the National Telecommunications and Information Administration, and other executive-branch agencies. A list of the parties that filed comments on the record is included in Appendix A.

III. DISCUSSION OF GMPCS ISSUES

A. Devices Sold, Leased, Offered for Sale or Lease, or Imported, Shipped, or Distributed for Sale or Lease in the United States

1. Mandatory Certification

24. Most of the commenters agreed that the Commission should require GMPCS terminals to be authorized pursuant to the test-based certification procedure specified in Part 2, Subpart J before being imported for domestic sale or lease or otherwise being placed on the market in the United States.[46] Others advocated adoption of a more lenient policy. Iridium LLC contended that certification of GMPCS terminals should remain purely optional, as it has been under the interim program adopted in 1998.[47] Constellation Communications, Inc. and Teledesic LLC recommended adoption of a mandatory certification rule that would apply only to GMPCS terminals that have been registered with the ITU or for which ITU GMPCS registration is being sought.[48] They maintained that limiting the scope of the certification requirement in this way would obviate any need for grandfathering or for further deliberation

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[43] *Id.* at ¶26 and Appendix A.

[44] *Id.* at ¶¶ 25 and 30.

[45] *Id.* at ¶¶ 25 and 42.

[46] *See* Comments of The Boeing Company filed June 21, 1999 at 2-3; Comments of ICO Global Communications (Holdings), Ltd. filed June 21, 1999 at 3; Comments of Orbital Communications Corp. ("Orbcomm") filed May 3, 1999 at 6; Joint Comments of L/Q Licensee, Inc., Globalstar, L.P., and Airtouch Satellite Services U.S., Inc. filed June 21, 1999 ("Globalstar Joint Comments") at 7-8; Comments of Skybridge L.L.C. filed June 30, 1999; Comments of AMSC Subsidiary Corp. filed June 21, 1999; Reply Comments of TMI Communications and Co., L.P. filed July 21, 1999 at 4; Comments of Inmarsat Ltd. filed June 21, 1999; Comments of Comsat Corp. filed June 21, 1999; Reply Comments of Cornell University filed July 21, 1999 at 9; Comments of Motorola, Inc. filed June 21, 1999, at 5-6.

[47] Comments of Iridium LLC filed June 21, 1999, at 4.

[48] Comments of Constellation Communications, Inc. filed June 21, 1999, at 6; Reply Comments of Teledesic LLC filed July 21, 1999, at 3.

as to which types of earth-station terminals should be subject to it.

25. We adopt a mandatory certification rule for portable, land-based GMPCS transceivers.[49] The rule will require such devices to be tested and found in compliance with pertinent technical standards in the Commission's rules before being sold or leased in the United States, offered for sale or lease in the United States, or imported, shipped, or distributed for sale or lease in the United States. This requirement will minimize risks of interference and RF exposure, in accordance with the Congressional policy embodied in Section 302(a) of the Communications Act and the National Environmental Policy Act of 1969.[50]

26. Although recipients of license authority for transmitter operation have a legal obligation to ensure that the licensed devices operate in accordance with the Commission's pertinent technical rules, the Commission has not previously required test data to be routinely submitted to prove that land-based GMPCS transceivers actually meet such requirements. Nor has the Commission previously required any authorization to be obtained for importation or marketing of land-based GMPCS transceivers. Previously-adopted rule provisions have prohibited importation or domestic sale of RF devices that do not meet all pertinent technical requirements in the Commission's rules,[51] but enforcement of these restrictions with respect to land-based GMPCS transceivers was infeasible because there were no corresponding equipment-authorization rules for such devices that required prior demonstration of compliance and identification marking. In the absence of such prior compliance assessment and marking of compliant devices, it would be necessary to individually test each transceiver in a ship's cargo, wholesaler's warehouse, or retailer's inventory in order to determine whether that particular device could be lawfully imported or sold. Our adoption of a rule requiring portable, land-based GMPCS transceivers to be certificated under Part 2, based on submission of test data, prior to commercial importation or domestic marketing is thus an essential regulatory measure that will enable the Commission to actively ensure that operation of such devices in the United States will not interfere with reception of authorized radio services or cause RF exposure injury.

27. This action also makes authorization requirements for portable, land-based GMPCS transceivers more consistent with requirements for functionally-similar terrestrial wireless transceivers, such as cellular telephones, which have been subject to mandatory certification under rules adopted previously. None of the parties that filed comments in this proceeding offered any justification for disparate regulatory treatment of portable, land-based GMPCS transceivers in this regard. In accomplishing the public interest objective of barring distribution to consumers in the United States of transmitters that do not meet FCC standards for prevention of interference and hazardous radiation exposure, we believe it is appropriate that the requirements applicable to these functionally-similar services be as consistent as possible.

28. We see no merit in the Constellation/Teledesic recommendation to limit the certification requirement to apply only to devices registered with the ITU or subject to a pending request for such registration. Our certification rules serve the important purposes of preventing destructive interference with radio services and protecting operators from excessive RF radiation exposure. A certification

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[49] We use the more-specific "transceivers," instead of "terminals," when discussing the rules we are adopting here because, for reasons stated below, those rules apply only to terminal devices that transmit as well as receive. We have used the more-general word "terminals" when summarizing the NPRM, on the other hand, because that was the word that the Commission used there.

[50] 47 U.S.C. § 302(a) and 42 U.S.C. §§ 4321-4335. *See* ¶14 and n.21, *supra*.

[51] *See* 47 C.F.R. §§ 2.803(a)(2) and 2.1204(a)(2), discussed in ¶¶ 15-16, *supra*.

requirement exempting transceivers for which ITU GMPCS registration has not previously been obtained or requested could permit many GMPCS transceivers to be imported and domestically sold without certification, as such registration is merely optional. We cannot assume that portable GMPCS transceivers placed on the market in the United States, whether or not ITU-registered, would always be manufactured to comply with the Commission's technical standards if there were no pertinent requirement for test-based equipment authorization. We therefore decline to limit the certification requirement in this regard.

2. Scope

29. *Non-TerminalTransmitters: Exempt.* The Commission proposed in the NPRM to adopt a certification rule that would expressly apply to "all GMPCS terminals." Although the NPRM did not define "terminals," the Commission was using it to refer to devices positioned at one *end* of a communication channel – *i.e.*, devices operated by end users for radio communication. No commenter contended that the certification requirement should apply to transmitters not operated by end users. As proposed, we are adopting a certification requirement that applies only to earth-station equipment designed for operation by end users of satellite communication services. This will serve the primary objective that Congress expected the Commission to achieve in exercise of the authority delegated in Section 302 for regulation of the importation and marketing of RF devices: *i.e.*, to prevent mass distribution of RF emitters incapable of operating in compliance with relevant technical requirements in the FCC's rules. The new certification requirement will not apply to network infrastructure devices, such as feeder-link transmitters and transmitters used for tracking and command uplinks. We believe that our traditional mode of regulating use of such devices will suffice to protect the public interest.

30. *Receive-Only Devices:Exempt*. The certification requirement that we are adopting here applies only to devices that transmit; it does not apply to receive-only devices. The Commission has not established any technical performance requirements for receive-only earth-stations and did not propose to do so in this proceeding. It would serve no purpose to require certification of equipment for which the Commission has prescribed no technical performance standards. One-way paging terminals, GPS receivers, and equipment used for reception of satellite broadcast services, such as DBS and Digital Audio Radio Service ("DARS"), are thus excluded.[52]

31. *FSS Transceivers: No Categorical Exemption.* Although the "M" in the acronym "GMPCS" denotes "mobile," GMPCS was explicitly defined in the NPRM (and, previously, in the GMPCS Arrangements)[53] as including *any* satellite telecommunication service provided directly to end users, no matter whether the service is classified as "mobile" or "fixed" – *i.e.*, no matter whether the service is accessed with transceivers designed to be used in motion or with transceivers designed for stationary operation. Hence, the certification rule proposed in the NPRM applied, by its terms, to both fixed and mobile terminals. The Commission asked for comment, however, as to whether certification should only be required for earth-station terminals likely to be transported across national borders and whether Fixed-Satellite Service ("FSS") terminals should therefore be exempted.[54]

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[52] It could be argued that DBS receivers are not "terminals," in a strict sense, because they are not positioned at the very end of the relevant communication channels but instead feed signals to separate interface devices (*i.e.*, television receivers) that process them to produce the display seen by viewers. Hence it could be argued that DBS receivers were beyond the scope of the certification rule proposed in the NRPM. The same argument could be made with respect to DARS receivers that feed signals to separate speakers.

[53] *See* GMPCS Arrangements, Article IV.

[54] NPRM at ¶20.

32. Motorola Inc., Teledesic, and Skybridge LLC contended that the certification rule should apply to fixed, as well as mobile, terminals because FCC certification would facilitate equipment authorization in other countries and this presumed benefit should be available equally for manufacturers, suppliers, and purchasers of mobile and fixed terminals.[55] More specifically, Teledesic and Skybridge maintained that adoption of rules applicable to FSS terminals would enhance commercial prospects for provision of broadband service via non-geostationary-orbit FSS systems to users with portable terminals.[56] On the other hand, Leo One USA Corporation argued for exempting FSS terminals from certification, "[b]ecause the GMPCS-MoU … addresses only the need to promote transborder flows of equipment."[57]

33. Leo One's argument for exempting all FSS terminals ignores the Commission's stated reasons for proposing a mandatory certification rule.[58] Although portability is relevant, as explained below, the distinction between transceivers designed for operation in motion and transceivers designed for stationary operation has no material bearing on the need for mandatory certification. Therefore, we are not categorically exempting all FSS transceivers from the certification requirement. Rather, as indicated in the following paragraphs, the requirement extends to FSS transceivers that are portable.

34. *Ship and Aircraft Transceivers and Other Non-Portable Devices: Exempt.* In the NPRM, the Commission proposed to limit application of the certification rule to hand-held and portable terminals and accordingly proposed to exempt terminals permanently installed on ships, boats, or planes.[59] Comsat agreed that the certification rule should apply only to devices that users can easily carry with them,[60] and the Japanese Ministry of Posts and Telecommunications similarly suggested that the rule should apply only to terminals that are portable and/or mobile.[61] Other commenters maintained that the certification rule should apply without limitation to all earth-station terminals designed for operation by end users.[62] Iridium contended that exempting sub-categories of end-user earth-station terminals would create unnecessary regulatory complexity.[63] In opposition to the proposal to limit application of the certification rule to portable devices, Teledesic contended that it is unclear what "portable" would mean in this context.[64]

35. Several commenters approved of the proposal to exempt permanently installed maritime and aircraft earth-station terminals.[65] Boeing, Inmarsat, and ICO Global Communications argued that there

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55 Motorola Comments at 3; Teledesic Comments at 3 and 8; Skybridge Comments at 3.

56 Teledesic Comments at 3 and 9; Skybridge Comments at 2-4.

57 Comments of Leo One USA Corp. filed June 21, 1999 at 2.

58 *See* ¶21, *supra*.

59 NPRM at ¶24.

60 Comments of Comsat Corporation filed June 21, 1999 at 2-3.

61 Comments of the Ministry of Posts and Telecommunications of Japan, filed May 21, 1999.

62 Teledesic Comments at 9; Globalstar Joint Comments at 8; Motorola Comments at 5; Reply Comments of Iridium LLC filed August 9, 1999 at 5.

63 Iridium Reply Comments at 5.

64 Teledesic Comments at 10.

65 Boeing Comments at 4-5; Comsat Comments at 3; Inmarsat Comments at 2, Reply Comments at 6; Comments of ICO Global Communications (Holdings) Limited at 3.

was no need to adopt a certification requirement for such devices because they are subject to a variety of existing regulations that serve the same purpose. The National Telecommunications and Information Administration said that it had no objection to exempting such devices from certification provided that they are made subject to the proposed limits on out-of-band emissions in the 1559-1610 MHz band.[66] On the other hand, Cornell University and Globalstar maintained that such exemptions would be unwarranted. Cornell argued that MSS transceivers on ships, boats, and aircraft should be subject to certification because radio-astronomy observation at the Arecibo National Research Center is vulnerable to disruption by emissions from such devices, especially those that are airborne.[67] Globalstar pointed out that the NPRM offered no rationale for exempting devices installed on ships, boats, or aircraft and argued that application of the certification rule should not depend on where or whether users choose to install equipment.[68]

36. It is appropriate, for several reasons, to require certification for commercially imported or domestically-marketed earth-station transceivers that are portable or designed for handheld operation. First, it is difficult to identify those responsible for interference caused by operation of such devices because they can be widely distributed in great numbers to end users who transport them and operate them in many different locations without incurring any obligation to notify the Commission of their whereabouts. Second, because of the potential ubiquity of handheld MSS transceivers and the spectral location of their assigned transmission frequencies, mass distribution of such devices not meeting the Commission's pertinent limits on out-of-band emissions would present an intolerable risk of catastrophic interference with aeronautical radio-navigation and harmful interference with other radio services. Third, because the radiating elements of handheld and portable earth-station transceivers are situated in close proximity to the operators' bodies when in use, operation of such devices could be hazardous if the devices do not meet the standards prescribed in Part 2 of the Commission's rules to protect users from RF exposure.[69] For these reasons, we conclude that it will serve the public interest to prevent portable GMPCS transceivers (including those designed for handheld operation) from being placed on the market in the United States unless it has been shown through certification that they meet the Commission's technical standards.

37. On the other hand, we are not requiring certification of non-portable earth-station transceivers. It is neither self-evident nor deducible from the record before us that the current means of regulating operation of such devices are inadequate, and it would disserve the public interest to burden manufacturers, importers, and/or suppliers of such equipment with a superfluous authorization requirement. Nor is it apparent from the record in this proceeding that there is any need to adopt a new certification requirement for MSS transceivers designed for installation in maritime vessels or aircraft. Most such devices are already subject to test-based equipment authorization requirements.[70]

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[66] Comments of the National Telecommunications and Information Administration filed June 21, 1999 at 28.

[67] Reply Comments of Cornell University filed July 21, 1999 at 9-10.

[68] Globalstar Comments at 7.

[69] *See* 47 C.F.R. § 2.1093.

[70] *See, e.g.*, 47 C.F.R. §§ 87.145(a) and 87.147(a) (requiring certification for aeronautical transmitters, with narrow exceptions); § 80.203 (requiring certification or type-acceptance verification for all maritime transmitters except developmental stations and devices supplied by the U.S. government to fulfill contractual requirements, with no exemption for earth-station transmitters); § 80.1103(a) (specifying certification and other type-acceptance requirements for GMDSS transmitters, including earth stations), and § 80.1053(c) (prescribing a testing requirement for EPIRB transmitters).

38. Therefore, the mandatory certification rule that we adopt here applies only to portable earth-station transceivers not designed for installation in aircraft or maritime vessels. An FSS transceiver is portable for purposes of this rule if it is a "portable device" as defined in Section 2.1093 of the Commission's rules – *i.e.*, if its radiating antenna would ordinarily be within 20 centimeters of the operator's body when the device is in use.[71]

39. *Devices Used Only Within the United States: No Exemption.* In the NPRM, the Commission asked for comment as to whether the certification rule should be limited to exclude devices of a kind that are not likely to be transported across national borders.[72] In response, the Japanese Ministry of Posts and Telecommunications proposed a certification exemption for devices that are not "used or planned for use" in more than one country.[73] Leo One USA similarly advocated an exemption for devices developed for "niche uses unique to the United States."[74] In opposition to the Japanese Ministry's recommendation, Teledesic argued that it would be difficult to administer a rule exempting devices not "used or planned for use" in more than one country because the applicability of the exemption would depend on users' subjective intentions.[75]

40. Although the portability criterion in the rule that we are adopting excludes devices that are inherently unlikely to be transported across national borders, we decline to adopt an exemption for portable devices that are actually used only within the United States. Application of the certification rule cannot depend on where individual users ultimately carry and operate portable earth-station transceivers because the certification requirement pertains to activities that occur *before the subject devices are distributed to users*, such as importation and shipment to retailers. There would be no feasible way of ascertaining at the time when such portable devices are being imported or shipped to retailers which of them will eventually be carried across national boundaries by end users or operated in more than one country. Furthermore, even if it were feasible to ascertain in advance that a particular device, or series of devices, would be used only within the United States, that would not obviate the underlying concerns addressed by mandatory certification. To the contrary, the ultimate purpose of the certification requirement that we are adopting, as we have explained, is to prevent harmful interference and RF exposure from portable earth-station transceivers operated in the United States.

41. *Transceivers Used with Single-Satellite Systems: No Exemption*. TMI Communications and Company, L.P., contended in its comments that terminals used to obtain service from single-satellite systems should be exempt from certification. TMI's reason was that "GMPCS" was defined in the final report of the Chairman of the 1996 World Telecommunication Policy Forum as telecommunication service provided directly to end users from "a *constellation* of satellites" (emphasis added) rather than from a single satellite.[76] "Constellation of satellites" was defined in the GMPCS-MoU Arrangements,

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[71] Section 2.1093 specifies limits on the permissible field strength of portable transmitters with assigned operating frequencies between 100 kHz and 6 GHz to protect operators from harmful RF exposure and states that applications for equipment authorization of such devices must include statements confirming compliance with those limits.

[72] *Id.* at ¶20.

[73] Comments of the Ministry of Posts and Telecommunications of Japan, filed May 21, 1999.

[74] *Id.* Leo One Comments at 2.

[75] Teledesic Reply Comments at 2-3.

[76] Reply Comments of TMI Communications and Company, L.P., filed July 21, 1999, at 3. *See* Revised report by the Chairman, World Telecommunication Policy Forum (Geneva, 21-23 October 1996), Part I ¶5(a).

however, as "[o]ne *or more* satellites … operated as a system" (emphasis added).[77] In any case, neither the World Policy Forum Chairman's report nor the GMPCS-MoU Arrangements, which are merely advisory in nature, limits this Commission's rulemaking discretion. We do not agree that single-satellite-system terminals should be categorically exempt from Part 2 certification. It is clearly in the public interest to prohibit commercial importation into the United States, or commercial distribution and sale within the United States, of portable earth-station transceivers that have not been proven capable of operating in compliance with applicable FCC technical standards for prevention of harmful interference or radiation injury – regardless of whether the devices are for use with a single-satellite system or a multiple-satellite system.

42. *Dual-mode Terminals with Uncertificated Foreign-Standard Cellular Components.* Section 2.1204 of the Commission's rules generally prohibits importation of radio frequency devices not covered by equipment authorization under Part 2, unless they meet all applicable FCC rule requirements.[78] This prohibition was formerly limited by an exception in Subparagraph (a)(5) of that rule section for devices "imported solely for export" that "will not be … offered for sale for use in the United States." The Commission noted in the initial NPRM in this proceeding that it had proposed in another pending proceeding to clarify the Subparagraph (a)(5) exception in response to concern about enforcement.[79] The Commission also noted that commenters in the other proceeding had argued that elimination of the exception would unduly hinder importation of dual-mode devices combining foreign-standard cellular transceivers with GMPCS terminals for sale in the U.S. to purchasers intending to use them abroad. The Commission invited interested parties to file further comments on the issue in this proceeding.[80]

43. In response, Iridium LLC reasserted that it should be permissible to import dual-mode terminals with foreign-standard cellular components and uncertificated "GMPCS" transceivers not meeting FCC standards for domestic sale to purchasers intending to use the devices only outside the United States. Iridium LLC therefore urged the Commission to retain the exception in Subparagraph (a)(5) without modification.[81] Iridium North America, Globalstar, and Constellation contended that the rules should not bar importation of GMPCS transceivers merely because they are coupled with uncertificated foreign-standard terrestrial wireless components that are inoperable in the United States.[82]

44. Several months after these comments were filed, the Commission issued an order amending Subparagraph (a)(5).[83] As amended, Subparagraph (a)(5) permits uncertificated devices not meeting FCC standards to be imported "solely for export." Subparagraph (a)(5) also permits importation for *sale* in the United States of multi-mode devices incorporating uncertificated foreign-standard cellular components incapable of operating in the United States – provided that transmitter components that *are* technically capable of operating in the United States are certificated. We see no need for further revision of

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77 Likewise, the certification rule proposed in the NPRM applied by its terms to devices used to obtain service from systems with "one or more" satellites. NPRM at Appendix A.

78 47 C.F.R. § 2.1204.

79 *NPRM* at ¶43.

80 *Id.*

81 Iridium LLC Comments at 11.

82 Comments of Iridium North America filed June 21, 1999, at 3-4.

83 *Amendment of Part 2, Subpart K of the Commission's Rules regarding the Importation of Radio Frequency Devices Capable of Causing Harmful Interference* (Second Report and Order), FCC 99-326, 15 FCC Rcd 7221 (1999).

Subparagraph (a)(5).

3. Grandfathering

45. The Commission indicated in the NPRM that it was considering the possibility of adopting a "grandfather" exemption from mandatory certification, "in view of the difficulty of recalling and retrofitting [uncertificated] equipment already in use."[84] (The principal difficulty is that such uncertificated devices are not marked with the FCC Identifier.) Yet in the Further NPRM issued last year in this proceeding the Commission proposed to adopt a relevant certification requirement with no grandfather exemption. Specifically, the Commission proposed to amend Section 25.216 to require various kinds of mobile GMPCS transceivers to be certificated to emission limits pertaining to operation after January 1, 2005, including transceivers placed in service prior to adoption of those limits.[85]

46. All of the relevant comments filed in response to the initial NPRM agreed that GMPCS terminals already in use should be exempt from mandatory certification.[86] Further, Orbcomm urged the Commission to grandfather terminals placed in service within one year after adoption of a final certification rule in this proceeding to afford a transitional period for manufacturers and distributors to deplete inventories of previously-manufactured uncertificated devices.[87]

47. In comments filed in response to the Further NPRM, MSV and Globalstar argued that transceivers authorized under previously-issued blanket licenses that require compliance with the out-of-band emissions limits should be exempt from the proposed certification requirement for operation after January 1, 2005.[88] MSV stressed that many of the transceivers currently used to obtain service from its MSS system were made by companies that are no longer in the business of manufacturing such equipment. MSV asserted that it might therefore be difficult, if not impossible, to obtain the information necessary for certification of those devices.[89] In other comments filed in response to the Further NPRM, Inmarsat and Stratos Communications, Inc. contended that previously manufactured devices should be exempt from the requirement that certificated devices be marked with an FCC Identifier code.[90] They asserted that returning previously manufactured MSS transceivers to the manufacturers for marking with the Identifier code would disrupt service and would be very costly.[91] Inmarsat also maintained that sending Identifier labels to the owners of such previously manufactured devices would not be a

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[84] *NPRM* at ¶24.

[85] *Report and Order and Further NPRM*, Appendix B.

[86] Constellation Comments at 5; Comsat Comments at 4; Orbcomm Comments at 5; Iridium LLC Comments at 4 and Reply Comments at 3; AMSC Comments at 6; Inmarsat Comments at 2; TMI Comments at 5.

[87] Orbcomm Comments at 5-6.

[88] Comments of Mobile Satellite Ventures Subsidiary LLC filed Dec. 2, 2002 ("MSV FNPRM Comments"); Reply Comments of Globalstar, L.P. and Globalstar USA, LLC filed Jan. 2, 2003 ("Globalstar FNPRM Reply Comments").

[89] MSV FNPRM Comments at 9-10.

[90] Comments of Inmarsat Ventures PLC filed Dec. 2, 2002 at 4-6; Reply Comments of Stratos Communications, Inc. filed Jan. 2, 2003, at 4-5.

[91] Globalstar likewise asserted that a labeling requirement for previously-manufactured equipment would be onerous and impractical, asserting that more than 80,000 transceivers were currently deployed to Globalstar MSS customers and that tens of thousands more previously-manufactured Globalstar terminals were in stock, awaiting deployment. Globalstar FNPRM Reply Comments at 4-5.

satisfactory alternative because of the likelihood that the labels would be applied incorrectly or used inappropriately.

48. Because it pertains to importation and marketing, rather than ownership, possession, or use, the certification requirement that we are adopting does not bar current users of licensed, but uncertificated, GMPCS transceivers previously placed in service from continuing to operate them without further authorization. Furthermore, the new certification requirement will not take effect until November 20, 2004; in the interim, portable, land-based GMPCS transceivers may be sold, leased, offered for sale or lease, or imported, shipped, or distributed for sale or lease without certification under Part 2. This affords a reasonable amount of time for manufacturers to obtain certification before the effective date and prepare in advance for affixing FCC identification numbers and for manufacturers, importers, distributors, and retailers to dispose of current inventories of uncertificated devices.[92]

49. In the interest of reducing compliance costs and avoiding unnecessary regulatory complexity, we have decided not to adopt the proposed amendment to Section 25.216 that would have required certification of MSS transceivers previously placed in service if they would be operated after January 1, 2005. Devices certificated to applicable interim emission limits prescribed in Section 25.216 will be subject to the final emission limits for operation after January 1, 2005 but will not have to be re-certificated to the final limits unless modified in the manner described in Paragraph (c) or (d) of Section 2.1043.[93]

4. Recognition of Foreign Type Approval

50. Two commenters offered advice pertaining to acceptance of foreign equipment authorization. Iridium recommended adoption of a rule that would allow GMPCS terminals to be commercially imported into the United States without FCC certification if type-approved by foreign authorities to standards consistent with relevant ITU recommendations.[94] In support of that proposal, Iridium called attention to the assertion in the GMPCS MoU that "[national] type approval standards should be based on the relevant ITU Recommendations." Motorola, on the other hand, simply contended that the certification requirement for GMPCS terminals should not supercede relevant provisions in Mutual Recognition Agreements endorsed by representatives of the U.S. government.[95]

51. We reject the recommendation to accept any ITU-registered type approval to a standard consistent with ITU recommendations because that would not ensure compliance with all pertinent technical requirements in the FCC's rules. We acknowledge that it is generally desirable for the Commission's technical requirements for portable transceivers to conform to pertinent ITU

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[92] *Cf. Petition to Amend Part 68 of the Commission's Rules to Include Terminal Equipment Connected to Basic Rate Access Service Provided Via ISDN Access Technology* (Order on Reconsideration), FCC 97-126, 12 FCC Rcd 4615 ¶¶ 5-6 (1997); *Amendment of Part 95 of the Rules regarding the technical standards for transmitters operating in the 72-76 MHz band in the Radio Control (R/C) Radio Service* (Report and Order), FCC 91-103, 6 FCC Rcd 1975 ¶9 (1991).

[93] *See* 47 C.F.R. § 2.1043(c) and (d).

[94] Comments of Iridium LLC at 4. Iridium LLC offered this proposal as an alternative to its primary recommendation for optional certification.

[95] Motorola Comments at 5-6.

recommendations.[96] We acknowledge, moreover, that the Commission has an obligation under the Technical Trade Barriers Annex to the WTO Agreement to conform its technical regulations to relevant international standards when that would effectively fulfill its legitimate objectives.[97] The Commission has a statutorily-mandated responsibility to serve the public interest in preventing harmful interference and minimizing RF radiation hazards, however, and must exercise its own judgment as to what regulations are necessary for these purposes. For instance, in this Order we are amending the Commission's out-of-band emissions limits for mobile earth-station transceivers to prescribe a measurement interval shorter than the one specified in the corresponding ITU recommendation, based on a finding that this is necessary to minimize risk of catastrophic interference with aeronautical radio-navigation.[98] It would defeat the purpose of the out-of-band emission rule to permit commercial importation of mobile GMPCS transceivers that have merely been type-approved to an ITU-recommended standard that affords a lower level of protection than that rule prescribes.

52. We agree with Motorola that domestic certification requirements for earth-station transceivers should not override MRA commitments pertaining to recognition of type approval. As provided in 47 C.F.R. § 2.960I, GMPCS transceivers manufactured abroad can be certificated for compliance with the Commission's rules by foreign compliance-assessment agencies pursuant to the MRAs to which the United States government is a party. The terminals may then be exported to the United States for commercial purposes without further regulatory approval. The rules that we adopt today do not alter these policies.

53. We do not intend to recognize foreign type approval conducted outside the purview of U.S.-endorsed MRAs, however. The Executive Branch has followed a policy of committing to recognition on a mutual basis, under the terms of formal agreements that condition U.S. obligations on other parties' compliance with reciprocal recognition obligations and that establish bilateral or multilateral procedures for supervising the performance and accreditation of assessment agencies. The Commission has supported that policy by providing technical assistance for negotiation of MRAs and by revising its rules to give effect to recognition commitments under such agreements. It would undermine that trade policy and disserve the public interest that we are obliged to uphold to recognize type approvals sanctioned by foreign governments (even if ITU-registered and based on standards consistent with our own technical requirements) without reciprocal recognition commitments from those governments and without mutually-agreed procedures for monitoring the performance of assessment agencies and resolving accreditation disputes.

5. Technical Standards for Certification

54. The Commission proposed in the NPRM to specify certification standards for terminals that would be used to obtain service from GMPCS systems for which it had previously adopted service rules. It said that it intended to specify additional terminal certification standards on a "case-by-case" basis when adopting license rules for new types of GMPCS systems.[99] The Commission asked for comment as to whether its current technical requirements for GMPCS terminals were adequate to prevent interference

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[96] *See First Report and Order* at ¶69 ("Although we have discretion to impose … emission limits [for mobile earth stations] not sanctioned by the ITU, we are unwilling to do so in the absence of convincing grounds for concluding that such unilateral regulation is warranted.")

[97] Agreement on Technical Barriers to Trade, Article 2.4. *See* 19 U.S.C. § 3511.

[98] *See* ¶111, *infra*.

[99] *NPRM* at ¶32.

and radiation hazards or, conversely, whether they were too severe.[100] The Commission also asked whether it should adopt additional technical standards endorsed by international organizations in order to facilitate international roaming.[101]

55. Skybridge and Iridium LLC agreed that the Commission should initially establish certification standards only for systems licensed under existing service rules.[102] Orbcomm urged the Commission to consider revising its technical requirements for Non-Voice, Non-Geostationary ("NVNG") MSS transceivers to conform to any stricter standards adopted by the European Telecommunication Standards Institute ("ETSI"). According to Orbcomm, such harmonization of FCC and European standards would facilitate global acceptance of FCC certification.[103] Boeing similarly asserted that establishment of internationally-uniform certification standards would be crucial to GMPCS development but offered no specific suggestion for revising the Commission's current technical requirements.[104] Constellation, Iridium LLC, and Motorola maintained that there was no present need to adopt new technical requirements for GMPCS transceivers, however, aside from out-of-band emission limits to protect aeronautical radio-navigation.[105] In particular, Motorola maintained that there was no need for the Commission to adopt additional or stricter requirements espoused by ETSI, because manufacturers of subscriber transceivers for global GMPCS systems will be compelled by commercial incentive to design them to meet both European and U.S. type approval standards in any event.[106]

56. For reasons discussed in detail below, we amend certain out-of-band emission limits for MSS transceivers prescribed in Section 25.216. There is no basis in the record of this proceeding for revising any other technical requirements for portable GMPCS transceivers, however, or for imposing new technical requirements for such devices.

57. The certification rule proposed in the NPRM did not specifically identify the technical requirements to be addressed in applications for certification of GMPCS transceivers. Rather, the proposed rule simply stated that an applicant for certification of GMPCS transceivers must show that the devices meet all applicable technical requirements in Part 25 of the Commission's rules and "confirm" that they meet "the radiation exposure requirements specified in Section 24.52."[107] Constellation contended that it would be better, for the sake of clarity, for the rule to identify explicitly the specific technical standards for certification of transceivers for each type of GMPCS service.[108] Constellation also contended that the rule should refer directly to the sections of Parts 1 and 2 of the Commission's rules that prescribe radiation limits, rather than referring to Section 24.52, which pertains to certification of portable transmitters in the Personal Communications Services.

58. We agree with Constellation on both points. The certification rule that we adopt here

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100 *Id.* at ¶34.

101 *Id.*

102 Skybridge Comments at 5-6; Iridium LLC Comments at 9.

103 Orbcomm Comments at 9.

104 Boeing Comments at 3.

105 Constellation Comments at 10; Iridium LLC Comments at 9; Motorola Comments at 9-10.

106 Motorola Comments at 10. *See also* Iridium LLC Comments at 9 (contending that manufacturers will design GMPCS transceivers to meet FCC, ETSI, and ITU standards).

107 *NPRM*, Appendix A.

108 Constellation Comments at 6-7 and 10.

specifically identifies the technical requirements that comprise the standards for certification of GMPCS transceivers and refers directly to the pertinent radiation-hazard provisions in Parts 1 and 2.[109]

B. Personal-Effects Importation

1. Devices Not Certificated Under Part 2 or Not Licensed for U.S. Operation

59. Commenters agreed that, as proposed in the NPRM, travelers should be allowed to bring GMPCS terminals purchased in other countries into the United States as personal effects for purposes other than sale or lease, whether or not the devices are certificated pursuant to the FCC's rules or authorized under an FCC blanket license.[110] The rules that we adopt here will permit this. More precisely, the new rules will allow a traveler to carry up to three uncertificated GMPCS transceivers into the United States at one time. We are inserting a provision to this effect in Subsection 2.1204(a),[111] which enumerates the circumstances in which radio frequency devices may be imported. Travelers who bring uncertificated GMPCS transceivers into the United States as personal effects may use them here if such operation is authorized under the terms of a blanket license issued by this Commission and will not violate any of the Commission's regulations. Travelers with GMPCS transceivers not authorized for operation in the United States under an FCC blanket license may bring them into the United States but may not operate them here. As discussed below, we prohibit service providers from granting access to subscribers who attempt to use unauthorized GMPCS transceivers within the United States.

60. Adoption of this provision permitting personal importation of uncertificated GMPCS transceivers implements the essential recommendations of the GMPCS MoU for establishment of entry policies that enhance the value of GMPCS services by enabling travelers to carry GMPCS transceivers across national boundaries and use them in different countries without re-licensing. This action will also serve the public interest by avoiding creation of additional Customs enforcement burdens and sparing travelers entering the United States from consequent inconvenience and delay.

61. As indicated previously, we are specifying a quantitative limit on the privilege of personally importing uncertificated devices rather than merely relying on a prohibition against selling or leasing such devices in the United States. Because it may not be readily apparent at the point of entry whether a traveler intends to keep or sell equipment in his possession, we believe that a quantitative limit is necessary to afford regulatory certainty and prevent abuse. Subsection 1204(a)(7) currently permits travelers to bring three or fewer Part 15 devices into the United States for personal use. As amended here, Subsection 2.1204(a) will similarly allow personal importation of three or fewer uncertificated GMPCS transceivers at a time.[112] We do not believe that the quantitative limit will substantially affect customs processing because we assume that travelers will seldom have reason to carry more than three GMPCS transceivers among their personal effects.

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[109] *See* §25.129(c) in the rule-change appendix, *infra*.

[110] Globalstar Comments at 8; Boeing Comments at 2-3; Leo One USA Comments at 2; Orbcomm Comments at 4-5; Iridium North America Comments at 3; Iridium LLC Comments at 6; Motorola Comments at 6-7.

[111] 47 C.F.R. § 2.1204(a).

[112] *Cf.* 47 C.F.R. § 2.1204(a)(7) (setting a limit of three on the number of unintentional radiators that an individual may import for personal use).

2. Devices Without the ITU GMPCS Registry Mark

62. In the NPRM, the Commission proposed to prohibit entry of GMPCS terminals not certificated under Part 2 unless they are marked with the ITU-GMPCS logo, for two reasons.[113] First, the Commission assumed that GMPCS service providers would need the kind of information available in the ITU GMPCS Registry database to determine whether such uncertificated transceivers carried into the United States by international travelers could access their networks from within the United States without causing harmful interference.[114] Second, the Commission said that uncertificated GMPCS terminals brought into the United States as personal effects should be ITU-GMPCS-registered because it would be necessary, in the event harmful interference were caused by operation of such a device, to "trace the terminal to the ITU [GMPCS Registry] database and evaluate its technical specifications."[115]

63. Some commenters took issue with the proposal to prohibit entry of uncertificated devices not marked with the ITU-GMPCS logo. Constellation and AMSC contended that travelers should be allowed to bring any GMPCS terminal into the United States that can be operated under the terms of an FCC blanket license, whether or not the device is ITU-marked.[116] Further, Inmarsat contended that absence of the ITU-GMPCS mark should not preclude international travelers from carrying devices not covered by an FCC blanket license into and through the United States without using them.[117] Other commenters maintained that there should be a grandfather exemption from any such marking requirement. Comsat urged the Commission to exempt existing Inmarsat-system terminals, in particular, asserting that many terminals used to access the Inmarsat system were not marked with the ITU-GMPCS logo and that many of those had been placed in service before the ITU GMPCS Registry was established.[118] Iridium LLC and Motorola argued that there was no need for such grandfathering, however, because existing terminals could be retroactively registered with the ITU and could then be marked with the ITU-GMPCS logo at little cost through use of stick-on labels.[119] Motorola maintained, moreover, that a marking requirement for entry would be difficult to enforce if it were subject to grandfather exemptions.

64. We decide not to bar entry of GMPCS devices carried as personal effects that are not marked with the ITU-GMPCS logo. Such a restriction is not necessary to achieve the essential objective of the GMPCS MoU or the objectives that are served by equipment certification and would be of little public

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[113] *NPRM* at ¶26. Although the Commission did not explicitly say so, it apparently did not mean to suggest that the proposed ban against entry of GMPCS terminals without the ITU GMPCS mark should apply to devices that are covered by certification under Part 2 of the rules and marked with an FCC Identifier code. The proposed rule changes listed in the appendix to the NPRM would have left intact the existing provision in 47 C.F.R. § 2.1204(a)(1) to the effect that any radio frequency device covered by an FCC equipment authorization (*e.g.*, certification) may be imported.

[114] *NPRM* at ¶25.

[115] *Id.* at ¶27.

[116] Constellation Comments at 8; AMSC Reply Comments at 6-7.

[117] Inmarsat Comments at 3.

[118] Comsat Comments at 6. *See also* AMSC Reply Comments at 7 (asserting that any device grandfathered from mandatory certification should also be grandfathered from an ITU-GMPCS marking requirement); TMI Reply Comments at 5-6 and Inmarsat Reply Comments at 6-7 (advocating grandfather exemption for all devices currently in service authorized under FCC blanket licenses); and Orbcomm Comments at 5 (advocating exemption of devices placed in service within one year after adoption of an ITU-GMPCS marking requirement).

[119] Iridium LLC Reply Comments at 9-10; Motorola Reply Comments at 6-8.

benefit. The primary objective of the GMPCS MoU and the ITU registry process is to facilitate personal transportation of GMPCS transceivers across international boundaries. That objective is fully served by our decision to allow travelers to carry GMPCS transceivers not certificated under our rules into the United States. Barring entry of devices not marked with the ITU GMPCS Registry logo would not make it any easier to carry GMPCS transceivers across international boundaries. On the contrary, as explained below, enforcement of such an entry restriction would result in increased delay and inconvenience for international travelers carrying GMPCS transceivers and other wireless devices.

65. The purpose of certification, as we said before, is to prevent mass distribution of transmitters that do not meet FCC technical requirements adopted to prevent destructive interference and hazardous RF exposure. Barring entry of devices not marked with the ITU GMPCS Registry logo would not serve that regulatory objective. The presence of the ITU GMPCS Registry logo does not signify that the marked device can operate in compliance with the FCC's relevant technical standards, nor does its absence signify that the device does not meet FCC standards or that there is no license authority for it to operate in the United States. Furthermore, the assumption in the NPRM that ITU-GMPCS registration of GMPCS transceivers brought into the United States is necessary to enable FCC-licensed service providers to deny access to devices that will cause harmful interference is incorrect. GMPCS system operators and service providers control access to their networks by means of proprietary identification codes. Whether manufactured in the United States or abroad, a transceiver cannot be used to obtain service from an FCC-licensed GMPCS system unless it transmits a code sequence recognized by the system that uniquely identifies that device for billing purposes. The code signal is automatically transmitted rather than user-determined. Each transceiver's unique identifying code sequence is programmed into the device by the manufacturer, who must obtain it from the system operator, either directly or through an intermediary. Thus, every transceiver capable of accessing a GMPCS network is programmed with an enabling code sequence originally assigned by the system operator. In order to ensure that the transceivers used to obtain service from a GMPCS system will operate in compliance with the FCC's rules and pertinent license terms, the system operator or a licensed service provider must ensure that transceivers programmed to transmit identifying code sequences that the system will recognize are manufactured to the required specifications. They can do this either by making the devices themselves or through contractual arrangements with manufacturers that they provide with the code sequences required for access to their networks. Licensees need not consult the ITU GMPCS Registry database to ascertain the performance parameters of equipment that they make themselves or that is manufactured to their specifications under license or purchase contracts.

66. Nor are we convinced that ITU-GMPCS registration is essential for enforcement when interference occurs. The main enforcement problem when harmful interference results from operation of a mobile or portable transmitter is to identify the source of the interfering radiation, which may be possible through use of spectrum analysers, direction-finding equipment, and/or signal analysis equipment but cannot be accomplished by examining records in the ITU GMPCS Registry.

67. To effectively enforce a restriction against personal-effects importation of uncertificated GMPCS transceivers not marked with the ITU GMPCS Registry logo, Customs inspectors would not only have to look for the logo on portable objects hand-carried by international travelers or found among their personal effects but would also have to determine whether objects not marked with the logo are radio transmitters, and, more specifically, whether they are GMPCS transceivers. The screening process would be further complicated if there were a grandfather exemption from the ITU-marking requirement or an exemption for unmarked devices operable under the terms of an FCC blanket license.[120] Uncertificated

[120] Customs enforcement of an entry ban on unmarked transceivers would be more difficult, moreover, if, instead of exempting devices already in service, the Commission allowed the owners to use stick-on labels to comply with the marking requirement, due to the fact that such labels could easily be misapplied or (continued….)

devices without the ITU mark identified by Customs inspectors as GMPCS terminals would have to be confiscated and disposed of or stored pending reclamation. Effective enforcement of such a restriction would be burdensome and would entail additional inconvenience and delay for travelers entering the United States.

68. We therefore conclude that it would not serve the public interest to prohibit travelers from bringing uncertificated GMPCS terminals into the United States as personal effects unless the devices are marked with the ITU-GMPCS logo. We may reconsider this determination, however, if future circumstances or information brought to our attention suggest that imposing such an entry restriction might achieve some public-interest benefit not recognized in the foregoing analysis. In the meanwhile, the Commission will continue to support the ITU GMPCS Registry process by apprising the ITU Secretary General of FCC equipment authorization standards and procedures for GMPCS transceivers and by promptly complying with requests for notification to the Secretary General of any certification of GMPCS transceivers granted pursuant to the Commission's rules.

3. Approved-for-Domestic-Use List

69. The Commission proposed in the NPRM to compile an "approved for domestic use" list, from information in the ITU GMPCS Registry, of GMPCS terminals not certificated under Part 2 that have been type-approved by foreign authorities to standards compatible with FCC requirements and approved for use by operators of systems authorized to provide service in the United States. The Commission proposed to post the list to a database shared with the Customs Bureau to enable Customs inspectors to identify GMPCS devices without the FCC Identifier that can be operated in the United States without causing interference or radiation hazards.[121]

70. Public comment on this proposal was mostly unfavorable.[122] Opponents argued that there was no need to provide Customs inspectors with such a list because the information it would contain would be irrelevant to enforcement of entry restrictions.[123] The contention that such a list would be of no use for enforcing entry restrictions is correct. Because we are adopting a rule provision that will allow travelers to bring GMPCS transceivers into the United States that cannot lawfully be operated here, however, it might be useful, for purposes of deterrence, to display or distribute a notice at points of entrywarning travelers carrying such devices that they would be breaking the law if they were to use them in the United States. In particular, it might be useful to display or distribute a warning against use of GMPCS transceivers in the United States for communication via satellite systems that are capable of providing service to users in the United States but have no FCC earth-station license, identifying such systems and the associated service providers by name. We intend to consult the Customs Bureau on an ongoing basis concerning the possible value of such arrangements, which could be implemented without further rulemaking on the Commission's part. Furnishing information or warning notices to the Customs Bureau for display or distribution at points of entry is not a rulemaking function.

(Continued from previous page)
counterfeited. The current certification marking rules require the FCC Identifier to be "permanently affixed." 47 C.F.R. § 2.925(d). *See also* 47 C.F.R. § 15.19(b)(4) (forbidding use of stick-on paper labels for affixing the FCC Identifier mark).

121 *NPRM* at ¶¶ 26 and 41.

122 *See* Comsat Comments at 7-8; Iridium LLC Comments at 10 and Reply Comments at 6-7 and 8-9; Globalstar Reply Comments at n.8; Motorola Reply Comments at 5-6.

123 Iridium LLC Reply Comments at 7; Motorola Reply Comments at 5-6.

C. Blanket Licensing

1. Should Blanket Licensing of GMPCS Transceivers Be Eliminated or Merged With the Certification Process?

71. One of the principal recommendations of the GMPCS MoU was that procedures should be developed for issuance of "general" or "class" licenses for GMPCS terminals instead of requiring a separate license to be obtained for each device. The Commission has accomplished this objective by establishing a blanket licensing process for multiple, identical earth-station transceivers.[124] The Commission proposed in the NPRM to continue issuing blanket licenses for operation of GMPCS terminals but invited comment on the possibility of combining the licensing and equipment certification processes.[125]

72. Skybridge contended that there would be no need to review license applications for equipment subject to certification and therefore recommended that the Commission eliminate licensing requirements for GMPCS terminals when adopting a mandatory certification requirement for such devices.[126] No other commenter agreed that mandatory certification would eliminate the need for licensing. To the contrary, Iridium LLC maintained that licensing and certification serve different purposes; licensing specifies the authority and conditions under which transmitters may be used, while certification ensures that devices that are actually placed on the market meet applicable technical requirements in the Commission's rules.[127] Orbcomm argued that it is particularly important to continue blanket licensing of subscriber transceivers for "Little LEO" MSS systems that must adhere to duty-cycle limits and employ active avoidance techniques to minimize interference with government radio services because it is not possible to verify compliance with such requirements through certification testing.[128] Iridium LLC and Motorola contended that the Commission should continue with blanket licensing of GMPCS transceivers not only because the procedure serves domestic regulatory purposes but also because it incidentally facilitates global GMPCS development by providing a positive model for foreign governments that might otherwise require GMPCS transceivers to be individually licensed.[129]

73. No one argued that blanket licensing and certification of GMPCS transceivers should be combined. Rather, several commenters contended that the two processes should be kept separate.[130] Teledesic maintained that adopting a single procedure for both purposes would unduly delay transceiver licensing, arguing that there is no good reason for withholding transceiver licenses until production prototypes have been tested and found in compliance. Teledesic also stressed that different parties typically apply for certification and license authority, as certification is usually requested by equipment manufacturers and blanket licenses are usually issued to service providers.

74. We agree that certification and licensing serve different purposes and hence that our adoption of a certification requirement for manufacturing, commercially importing, or marketing GMPCS

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124 *See* 47 C.F.R. §§ 25.115(d), 25.135, 25.136, and 25.138.

125 *NPRM* at ¶¶ 30-31.

126 Skybridge Comments at 4-5.

127 Iridium LLC Comments at 8.

128 Orbcomm Comments at 7-8.

129 Iridium LLC Comments at 8; Motorola Comments at 8.

130 Teledesic Comments at 10; Globalstar Comments at 11; Motorola Comments at 8.

transceivers does not eliminate the need to license their operation. Licensing of such devices is mandated by the Communications Act, which generally prohibits operation of radio transmitters except pursuant to licenses granted by this Commission.[131] We also agree that certification and blanket licensing of GMPCS transceivers – which serve different regulatory purposes, require consideration of different kinds of information that will typically become available at different times, and may be requested by different parties – should be conducted separately.

2. Must Licensing Precede Certification?

75. The Commission stressed in the NPRM that certification does not authorize operation and that GMPCS terminals cannot be lawfully operated in the United States except pursuant to FCC licenses. The Commission therefore proposed to dismiss, as premature, applications for certification of GMPCS terminals filed before an FCC blanket license has been issued that grants authority for their operation.[132] ICO and Globalstar argued against this proposal. ICO asserted that officials in many foreign countries that have not established an equipment authorization process of their own will accept an FCC Identifier mark or the ITU-GMPCS mark as sufficient evidence of proper equipment performance. Therefore, according to ICO, manufacturers might need to obtain FCC certification of GMPCS transceivers not currently licensed for U.S. operation in order to facilitate exportation and sale of the devices in other countries. ICO maintained that adoption of a policy that would preclude this option would hinder global development of competitive GMPCS services.[133] Globalstar contended that there is no justification for withholding certification pending issuance of a blanket license. In particular, Globalstar asserted that it is unnecessary to bar certification prior to blanket licensing because GMPCS transceivers cannot be used unless a service provider authenticates them. Globalstar also contended that barring pre-licensing certification of GMPCS transceivers would be inconsistent with established regulatory practice pertaining to certification of other types of transmitters. For instance, Globalstar asserted that there is no such restriction on certification of cellular and PCS handsets.[134]

76. While it is true that the Commission's rules do not preclude pre-licensing certification of subscriber transceivers for terrestrial public mobile services, there is a problem of peculiar relevance to regulation of GMPCS transceivers that compels adoption of a different certification policy. The problem is that GMPCS transceivers not licensed by the FCC could be illegally used in the United States for communication via foreign-licensed satellite systems without any FCC authorization for earth-station operation. The Part 2 certification requirement would not prevent domestic marketing or commercial importation of such "rogue" transceivers for sale to users in the United States if it were possible to obtain certification for GMPCS transceivers without showing that they are designed for use with a satellite system with proper authority for provision of service in the United States. Mass marketing of such rogue devices in the United States could create serious interference problems even if they were certificated to applicable FCC technical standards. We are therefore adopting a rule provision[135] to the effect that certification will be granted for GMPCS transceivers only if the certification applicant produces an

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131 *See* 47 U.S.C. §§ 301, 303(b)-(f), 307(a), 308, and 309(a). The Act's general licensing mandate is subject to narrow exceptions that allow the Commission to authorize operation of certain kinds of transmitters by rulemaking rather than by granting license applications. These exceptions are of no pertinence here, however. *See* 47 U.S.C. § 307(e)(1). *But also see* 47 U.S.C. §§ 4(i) and 302(a).

132 *NPRM* ¶30.

133 ICO Comments at 5-6.

134 Globalstar Comments at 12.

135 *See* Paragraph (d) in new rule Section 25.129, set forth in Appendix B.

attested statement from a party with a relevant FCC blanket license or satellite authorization (including an "order reserving spectrum" pursuant to the *DISCO II* policy for authorizing provision of service via foreign-licensed satellites)[136] confirming that the devices are to be used with a system that may lawfully provide service to users in the United States. This will not necessarily require GMPCS transceivers to be blanket licensed in advance of certification.

3. "Streamlining" Application Requirements

77. In the NPRM, the Commission invited comment on ways to simplify the blanket licensing or certification process for GMPCS terminals to minimize delay or eliminate unnecessary burdens for applicants. For instance, the Commission asked whether it should refrain from reviewing blanket license applications for GMPCS terminals for compliance with technical requirements and whether the application forms for blanket licenses or certification should be modified to eliminate redundancy.[137] Several commenters offered specific recommendations in response.

78. Motorola, Teledesic, and Constellation contended that it should not be necessary for a service provider to submit a further showing in order to obtain authority for operation of additional types of transceivers with specifications and operating parameters consistent with the existing terms of its blanket license for GMPCS transceivers.[138] Teledesic therefore recommended that Section 25.118 be amended, if necessary, to relieve GMPCS blanket licensees from any obligation to notify the Commission of the introduction of new transceivers that are "electrically identical" to existing devices authorized by their licenses.

79. We agree that service providers should not have to notify the Commission of the placement in service of new transceivers that are operable within the existing terms of their GMPCS blanket licenses and are electrically identical to devices previously operated under those licenses. We recently amended Section 25.118 to eliminate the notice requirement for such changes.[139]

80. Globalstar and Constellation contended that service providers should not be required to submit technical information in applications for blanket licenses for GMPCS transceivers subject to equipment certification. Noting that the pertinent license application form requires submission of the same kind of technical information that must be submitted in certification applications, Globalstar asserted that reviewing such data in both the licensing process and the certification process would be administratively burdensome, time-consuming, and unnecessary.[140] For the same reason, Constellation contended that blanket licenses for GMPCS transceivers should be routinely granted without technical review to any qualified party authorized by the system operator to resell service and should authorize operation of any type or quantity of certificated transceivers approved by the system operator.[141] AMSC

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136 *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States* (Report and Order), FCC 97-399, 12 FCC Rcd 24094 (1997) ("*DISCO II*") at ¶185.

137 *NPRM* at ¶31.

138 Motorola Comments at 8-9; Teledesic Comments at 10-11; Constellation Reply Comments at 4.

139 *Amendment of the Commission's Space Station Licensing Rules and Policies* (Third Report and Order), FCC 03-154, 18 FCC Rcd 13486 (2003) at ¶74 and Appendix B ¶7.

140 Globalstar Comments at 11.

141 Constellation Comments at 9-10. *Also see* Orbcomm Comments at 8 and Iridium LLC Comments at 8 (recommending that the Commission revise the license application form to eliminate redundancy, but offering no specific suggestions to that end).

opposed these recommendations. AMSC argued that if the Commission were to issue blanket licenses for GMPCS transceivers without technical review it would be possible for foreign-licensed systems to gain access to the U.S. market without showing that their user transceivers meet FCC requirements.[142]

81. We agree that service providers should not be required to routinely submit information in blanket license applications for GMPCS transceivers pertaining to compliance with operating requirements that can be demonstrated by transceiver testing required for equipment certification. Contrary to AMSC's contention, the elimination of such redundant information from blanket license applications will not eliminate regulatory safeguards against non-compliant transceiver operation by subscribers to GMPCS services provided via foreign-licensed GMPCS satellites.[143] The principal safeguard is the requirement that GMPCS transceivers must be certificated under Part 2 to FCC requirements if they are to be commercially imported or placed on the market in the United States. Although travelers may carry GMPCS transceivers not certificated under Part 2 into the United States in small numbers for purposes other than sale or lease, GMPCS service cannot lawfully be provided to users with transceivers operated in violation of FCC requirements. Further, under the rules we are adopting in this proceeding service providers will be legally responsible for any such illicit operation.[144]

82. We are therefore amending the rules to eliminate requirements to submit such redundant compliance showings in blanket license applications. For instance, as Motorola correctly contended in public comments,[145] submission of RF exposure compliance showings in blanket license applications for GMPCS transceivers subject to mandatory certification would be duplicative, because the same information is required in applications for certification. Section 2.1093 of the Commission's rules states that applications for Part 2 equipment authorization for portable transmitting devices must include a statement confirming compliance with the radiation limits in Paragraph (d) of the same section, based on data to be submitted to the Commission on request. Section 1.1307(b) requires an identical compliance statement to be included in transmitter license applications. We agree with Motorola that there is no need to require such compliance statements for GMPCS transceivers to be submitted both in blanket license applications and in applications for certification. We also agree that it is more appropriate to require the compliance statement to be submitted with applications for certification than to require it to be included in blanket license applications, because compliance with the RF radiation limits can best be demonstrated by equipment testing. Requiring the showing to be made in blanket license applications would effectively require production prototypes to be made before license authority is granted, which would be unreasonable. We are therefore amending Section 1.1307(b) to state that RF exposure compliance statements are not required in blanket license applications for portable earth-station transceivers subject to mandatory certification pursuant to Part 2. We are also adopting an amendment to modify an information-filing requirement in Section 25.132(a) that would be similarly redundant if imposed on applicants for blanket licenses for GMPCS transceivers subject to mandatory certification .

83. We are not eliminating all requirements for submission of technical information in blanket license applications for GMPCS transceivers, however. GMPCS blanket license applicants will remain subject to rule provisions requiring submission of technical information of a kind that would not be

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142 AMSC Reply Comments at 5.

143 For an example of a technical requirement pertaining to GMPCS transceiver operation that cannot be shown to be met merely by testing transceiver performance, *see* 47 C.F.R. § 25.

144 *See* ¶90, *infra*.

145 Motorola Comments at 8.

duplicated or superceded in certification showings[146] and must provide any information necessary to support requests for waiver of technical standards for transceiver operation.

D. Responsibility for Unlawful Operation of GMPCS Transceivers

84. The Commission stated in the NPRM that it would hold each FCC-licensed provider of GMPCS service accountable for any proven violation of the rules pertaining to operation of GMPCS transceivers in the United States. Accordingly, the Commission proposed to adopt a rule that all providers of GMPCS service in the United States "must be licensed under [Section] 25.136" of the Commission's rules.[147] Further, the Commission said that GMPCS transceivers used unlawfully to obtain service in the United States from providers and satellite systems without licenses or operating authority from the FCC would be subject to confiscation under Section 510 of the Communications Act.[148]

85. Teledesic maintained that the proposal to hold GMPCS service providers responsible for unlawful transceiver operation was unclear because the Commission had not explained whether "service providers" meant earth-station licensees or space-station licensees. Teledesic argued that the responsibility should be borne by earth-station licensees because they have more direct relationships with end users and because the Commission does not issue space-station licenses for foreign-licensed satellites.[149] Iridium LLC similarly contended that the intended significance of the proposed rule that "[a]ll GMPCS service providers must be licensed under [Section] 25.136" was unclear because the NPRM did not define "service provider." Moreover, Iridium LLC pointed out that Section 25.136 does not state that all service providers must be licensed and does not apply by its terms to all GMPCS services.

86. Although "service providers" is undefined in the NPRM, the Commission was using the term to refer to parties that provide GMPCS service directly to end users. Thus, the apparent intention of the proposed rule that all GMPCS service providers must be licensed under Section 25.136, which pertains to blanket licensing of MSS transceivers, was to require those providing GMPCS service directly to end users in the United States to have a blanket license for operation of their subscribers' transceivers. Although we do not think that it is necessary for every party providing GMPCS service to end users to have a separate blanket license, GMPCS transceivers cannot lawfully be operated in the United States without direct or indirect permission from someone with license authority from the Commission for such operation. We are therefore amending Section 25.136 and other relevant sections of Part 25 to make it clear that a GMPCS transceiver can be lawfully operated in the United States only to receive service from the holder of an FCC blanket license for such operation or from another party with the permission of such a blanket licensee. The amended rules also state that a blanket licensee is legally responsible for operation of the GMPCS transceivers that it directly or indirectly authorizes and prohibit GMPCS system operators from transmitting communications generated by, or addressed to, transceivers in the United States that are neither directly nor indirectly authorized by someone with pertinent blanket license

146 *See, e.g.*, 47 C.F.R. §§ 25.135(a) and 25.142(b)(2)(ii). As previously acknowledged, moreover, certification testing would not suffice to demonstrate compliance with the technical requirements in 47 C.F.R. § 25.213 pertaining to operation of Big LEO GMPCS transceivers.

147 *Id.*, Appendix A.

148 *Id.* at ¶42.

149 Teledesic Comments at 5-6. *See DISCO II* at ¶188.

authority from the Commission. The amended rules place legal responsibility for operation of GMPCS transceivers on the parties that determine which transceivers have access to service from a particular GMPCS system at any given time and ensure that anyone transmitting messages to or from transceivers in the United States not licensed by the FCC will incur a risk of liability for violation of the FCC's rules.[150]

87. Teledesic and Constellation objected to the proposal to hold licensed GMPCS service providers responsible for "any and all proven infractions" because it could result in imposition of liability for actions beyond the control of service providers. They contended that licensees should not be held responsible for rule violations involving transceiver operation or interference resulting from such operation if the faulty operation is due to unauthorized user tampering. They contended, moreover, that licensees should not be held responsible for transceiver operation that does not gain access to their networks.[151] We agree on these points. The rules that we are adopting will not impose liability on licensees for faulty transceiver operation due to tampering that they have not authorized or condoned or for unauthorized transceiver operation that does not gain access to their networks. Rather, they provide that blanket licensees are responsible for the transceiver operation that they authorize.

88. Comsat, which provides GMPCS service to end users via Inmarsat satellites, said that it could not determine the location of its subscribers' transceivers and therefore had no means of blocking service to users in any particular portion of an Inmarsat satellite coverage footprint.[152] In effect, Comsat contended that that it should not be held at fault for providing service to subscribers in the United States using transceivers that cannot be lawfully operated here.

89. Conversely, AMSC argued that service providers that cannot determine the location of transceivers used to access their networks should not be absolved of responsibility for unlawful transceiver operation merely for that reason. Rather, AMSC contended that "appropriate liability" should be imposed on such service providers if they are subject to FCC jurisdiction. AMSC also contended that GMPCS service providers without the ability to block calls to or from users in the United States should be required to employ non-technical means to deter their subscribers from operating non-FCC-licensed transceivers in this country. For instance, AMSC suggested inserting provisions in service contracts that prohibit transceiver operation within the United States.[153] AMSC also contended that when presented with evidence that a GMPCS provider's subscriber transceivers are being illegally operated in the United States the Commission should prohibit travelers from bringing such transceivers into the United States unless and until the service provider or system operator demonstrates that it has taken effective measures to prevent such illegal operation.[154] Inmarsat contended that such a solution would be too draconian because it could effectively penalize innocent subscribers due to one person's alleged wrongdoing. Inmarsat also contended that if the Commission were to adopt such a policy, regulators in other countries would probably adopt similar policies, thereby increasing the likelihood of discrimination and

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150 *See* 47 U.S.C. § 502 (providing, *inter alia*, that anyone convicted of willfully and knowingly violating an FCC rule may be fined $500 per day for each day when the violation occurred, in addition to any other legal penalty) and 47 U.S.C. § 503(b) (providing, *inter alia*, that anyone found guilty of willfully or repeatedly violating any FCC rule shall be liable for a forfeiture penalty. If the violator is a common carrier, the penalty may be as much as $1,000,000 for a single continuing violation. For violators other than common carriers and broadcast and cable television licensees, permittees, and applicants, a penalty of as much as $75,000 can be assessed for a single continuing violation.)

151 Teledesic Comments at 7 and n.14; Constellation Reply Comments at 4-5.

152 Comsat Comments at 10.

153 AMSC Reply Comments at 8.

154 AMSC Comments at 14, Reply Comments at n.11.

retaliation.[155]

90. We agree with AMSC that service providers without technical means of selectively blocking service to users in the United States should not be absolved of responsibility for unlawful operation of their subscribers' transceivers in this country. To adopt such a policy would eliminate any incentive for service providers to employ non-technical means to deter subscribers from using transceivers not licensed by the FCC to obtain service in the United States. Whether a service provider has employed all feasible means to prevent or deter such illegal operation would be a relevant factor to consider when assessing forfeiture liability.

91. We agree with Inmarsat that barring entry of all non-FCC-licensed transceivers used to obtain service from a particular GMPCS provider on finding that a few of them have been illegally operated in the United States would adversely affect innocent subscribers. Moreover, such an entry restriction would be difficult to enforce unless the identity of the service provider could readily be ascertained from superficial inspection of the devices.[156] Also, rigorous enforcement of such a restriction would entail substantial delay and inconvenience for innocent travelers. Hence we do not believe that it would serve the public interest to adopt such an enforcement policy at this time. We might reconsider this issue, however, in response to evidence that GMPCS service providers are flouting the Commission's licensing authority by encouraging or condoning unlawful transceiver operation in this country.

E. Access to Traffic Data

92. The Commission noted in the NPRM that the GMPCS MoU included a pledge "to develop arrangements for GMPCS operators to provide, on a confidential basis … to any duly authorized national authority which so requests, appropriate data concerning traffic originating in or routed to its national territory, and to assist it with … measures … to identify unauthorized traffic flows therein." The Commission declined to propose a rule that would require GMPCS system operators or service providers to submit traffic data, however. Rather, the Commission said that it would be better for such arrangements to be developed through *ad hoc* negotiation between regulators and GMPCS companies.[157]

93. Several parties addressed this issue in public comments.[158] All agreed with the Commission's tentative conclusion that negotiation of separate agreements with system operators and service providers would be the best way to address relevant concerns. We continue to believe, as stated in the NPRM, that balancing concerns such as national security and the need to protect sensitive and proprietary traffic data is best left to individual agreements, and we therefore do not adopt a rule requiring submission of traffic data.

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155 Inmarsat Reply Comments at 8-9.

156 We note, in this regard, Comsat's assertion that an Inmarsat-system subscriber transceiver can be used to obtain service from different service providers in consecutive billing periods. Comsat Comments at 10.

157 *NPRM* at ¶36.

158 Satellite Industry Association Reply Comments at 2; Inmarsat Comments at 4; Skybridge Comments at 6; Constellation Comments at 11; Comsat Comments at 11; Iridium LLC Comments at 10.

IV. DISCUSSION OF OUT-OF-BAND EMISSION ISSUES

94. In May 2002 the Commission adopted a new rule section, Section 25.216, which prescribes limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite services in the 1559-1605 MHz frequency band. However, some further issues that had been raised in reply comments remained unresolved. The Commission invited public comments on those issues in a Further NPRM ("FNPRM") in this proceeding.[159]

A. Limits for Carrier-Off State

95. When a mobile earth-station transceiver ("MET") is powered on but not transmitting a signal, it is said to be in a "carrier-off" state. The Commission proposed in the FNPRM to adopt a requirement that the peak e.i.r.p density[160] of carrier-off emissions from all METs with assigned uplink frequencies between 1 and 3 GHz must be suppressed to -77 dBW/100 kHz or less in the 1559-1610 MHz band, in accordance with a pertinent ITU recommendation.[161]

96. In its comments on the FRNPM, the NTIA urged the Commission to adopt an e.i.r.p limit of -80 dBW/MHz for carrier-off emissions, rather than the -77 dBW/100 kHz limit proposed. The NTIA maintained that the -80 dBW/MHz value is consistent with the ITU-R recommendation and would greatly simplify compliance measurements.[162] The NTIA pointed out that there are two technical differences between the NTIA proposal and the international standard proposed by the Commission for carrier-off emissions: the measurement bandwidth and the detector function of the measurement equipment. The NTIA suggests using measuring equipment with an average detector function, which is consistent with the method used for measuring carrier-on emissions, instead of using the peak-hold techniques specified in the ITU recommendation for carrier-off measurements. For noise-like emissions similar to those produced by METs, the values of the peak-to-average ratio range from -10 dB to -14 dB, and a representative value of -13 dB was used in the development of the NTIA carrier-off emission limit. Therefore, the NTIA believes that its proposal for carrier-off emission would simplify compliance measurements, since both the carrier-on and carrier-off emission measurements would use the same bandwidth and detector function.

97. We agree with the NTIA that using the same detector function and bandwidth would simplify compliance measurements, and that the -80 dBW/MHz value is consistent with the ITU recommendation. Use of an average detector may allow for higher peak emissions than the ITU recommended levels, as peaks would be averaged out in the integration function. Given, however, that the purpose of this limit is to protect Global Navigation Satellite System ("GNSS") operations under the NTIA's purview, we are persuaded by the NTIA's undisputed advice that this proposed limit on average e.i.r.p. density is sufficient. Hence we cannot conclude that there is justification for imposing a more restrictive carrier-off

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159 *Report and Order and Further Notice of Proposed Rulemaking*, FCC 02-134, 17 FCC Rcd 12941 (2002) at ¶80 *et seq.*

160 E.i.r.p., i.e., effective isotropically radiated power, is a function of the power supplied to a transmitting antenna and the antenna gain in a given direction relative to that of an isotropic radiator. E.i.r.p density is the e.i.r.p. over a specified bandwidth.

161 Rec. ITU-R M.1343.

162 NTIA Comments at 4.

rule.[163] We are therefore adopting the NTIA's proposal to limit the peak e.i.r.p density of carrier-off emissions from METs with assigned uplink frequencies between 1 and 3 GHz to -80 dBW/MHz or less in the 1559-1610 MHz band.

98. Although it did not oppose adoption of the proposed carrier-off-state limit, MSV urged the Commission to apply the limit only to L-band METs[164] that are manufactured, rather than "placed in service", one year or more after the effective date of an order adopting these limits.[165] MSV contended that L-band METs manufactured prior to then should be grandfathered indefinitely. MSV maintained that it would be fundamentally unfair to apply new carrier-off limits retroactively to METs manufactured prior to the adoption of a rule specifying the limits.

99. We agree that previously manufactured L-band METs should be grandfathered, given the difficulty of recalling such existing METs and since there has been no complaint of interference from such devices to date. However, if we were to exempt all METs manufactured within a full year after the effective date of this Order, as requested by MSV, there might be a large unsold inventory of non-compliant METs at the end of the transition periodthat would pose a potentially significant interference risk if placed into service. In order to keep the number of non-compliant L-band METs low yet still give the manufacturers time to design and build compliant METs, we will apply these limits to L-band METs manufactured more than six months after Federal Register publication of the rule changes adopted by this Order.

B. Further Requirements for Suppression in the 1605-1610 MHz Band Segment

1. Wideband Limits on Emissions in the 1605-1610 MHz Band for METs with Uplink Assignment Above 1626.5 MHz

100. The Commission tentatively concluded in the FNPRM that the ITU recommended out-of-band emission levels from L-band METs in the 1605-1610 MHz band[166] would be appropriate for domestic use and proposed to make January 1, 2005 the effective date for this requirement. The Commission sought public comments on this proposal.

101. In its comments on the FNPRM, MSV urged the Commission to apply the proposed stricter emission limit in 1605-1610 MHz only to L-band METs that are manufactured, rather than "placed in service," one year or more after the effective date of an Order adopting these limits.[167] MSV contended that METs manufactured within one year after the effective date of an Order adopting these new limits should be grandfathered indefinitely. MSV asserted that it would be fundamentally unfair to apply these new limits retroactively to METs manufactured prior to the adoption of a rule specifying the final limits.

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[163] No other comments were received on this proposal.

[164] 1.6 GHz METs used with geostationary-orbit MSS ("GSO MSS") systems are referred to as L-band METs. Three GSO MSS systems currently provide service to consumers in United States using assigned mobile-uplink frequencies between 1626.5 MHz and 1660.5 MHz.

[165] Mobile Satellite Ventures subsidiary LLC ("MSV") Comments at 1.

[166] This level is determined by the linear interpolation from -70 dBW/MHz at 1605 MHz to -46 dBW/MHz at 1610 MHz.

[167] Mobile Satellite Ventures subsidiary LLC ("MSV") Comments at 1.

102. We received no comments aside from MSV's on the proposal to adopt these limits. Nor did we receive any comments supporting or objecting to MSV's request to grandfather previously-operational L-band METs. We agree that previously manufactured L-band METs should be grandfathered, given the difficulty of recalling such existing METs and since there has been no complaint of interference from such devices to date. However, if we were to exempt all METs manufactured within a full year after the effective date of this Order, as requested by MSV, there might be a large unsold inventory of non-compliant METs at the end of the transition period that would pose a potentially significant interference risk if placed into service. In order to keep the number of non-compliant L-band METs low yet still give the manufacturers time to design and build compliant METs, we will apply these limits to L-band METs manufactured six months or more after Federal Register publication of this Order and grandfather all L-band METs manufactured prior to then.

2. Narrowband Limits

103. In the first Report and Order in this proceeding, the Commission adopted limits on narrowband emissions in the 1559-1605 MHz band from 1.6 GHz METs but did not adopt limits on emissions in the 1605-1610 MHz band because it had not previously proposed limits on emissions in that small segment of the 1559-1610 MHz Aeronautical Radionavigation band. In comments on the NPRM, the NTIA proposed that the e.i.r.p of narrowband spurs in the 1605-1610 MHz segment should be suppressed to a level 10 dB below the pertinent wideband limit, and accordingly suggested a -80 dBW e.i.r.p. limit on narrowband emissions in that band segment. The ITU likewise recommends that GNSS receivers have an additional 10 dB of protection against discrete emissions of less than 700 Hz in bandwidth.[168] Hence, the Commission proposed in the NPRM to adopt a requirement that the e.i.r.p of discrete emissions of less than 700 Hz from Big LEO METs[169] shall not exceed a level determined by linear interpolation from -80 dBW at 1605 MHz to -20 dBW at 1610 MHz.[170] Similarly, the Commission proposed to require that the e.i.r.p of such emissions from L-band METs with assigned uplink frequencies between 1626.5 MHz and 1660.5 MHz shall not exceed a level determined by linear interpolation from -80 dBW at 1605 MHz to -56 dBW at 1610 MHz and the e.i.r.p of such emissions from 2 GHz METs[171] shall not exceed -80 dBW between 1605 MHz and 1610 MHz.[172]

104. In its comments on the FNPRM, Inmarsat stated that narrowband limits for other L-band METs should be no more restrictive than those imposed on Big LEO METs.[173] Inmarsat contended that imposing more restrictive limits on L-band METs that transmit in an uplink band further away from the 1559-1610 MHz Aeronautical Radionavigation band than Big LEO METs would cause undue hardship for existing L-band MET users and manufacturers. Inmarsat asserted that neither of the ITU recommendations referenced by the Commission addresses the appropriate level of narrowband protection from L-Band METs and did not agree that the narrowband limits should be derived by subtracting 10 dB

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168 *See* Rec. ITU-R M.1477, *Technical and Performance Characteristics of Current and Planned Radionavigation-Satellite Service (Space-to-earth) and Aeronautical Radionavigation Service Receivers to be Considered in Interference Studies in the Band 1559-1610 MHz.*

169 *I.e.*, METs with assigned uplink frequencies between 1610 and 1626.5 MHz. Big LEO systems provide two-way voice and date communication via non-geostationary-orbit satellites to MET users in most areas of the world and afford seamless interconnection with the public switched telephone network.

170 We adopted wideband emissions limits for Big LEOs in the First R&O. *See* ¶94, *supra*.

171 METs operating in the 1990-2025 GHz uplink band are referred to as 2 GHz METs.

172 *See* FNPRM at paragraph 84.

173 Inmarsat Ventures PLC Comments at 7.

from the wideband limits.[174] Further, Inmarsat asserted that the Commission is not seeking to tighten the limits for the Big LEO METs because tighter limits are not needed to protect ARNS systems. If these rules are immediately enacted, Inmarsat contended, L-band MET users would need to confirm that their METs comply with the Commission's more stringent standards and replace METs that are non-compliant with those standards yet are apparently not harmful to ARNS systems. Similarly, manufacturers would need to test and might have to modify their production facilities to meet superfluous new limits. Inmarsat urged the Commission not to implement a proposed narrowband limit that does not appear to be needed to protect ARNS systems and would unnecessarily impose significant costs and disruption on L-band MET users and manufacturers.

105. MSV urged the commission to apply the stricter emission limit in the 1605-1610 MHz only to L-band METs that are manufactured one year or more after the effective date of an Order adopting these limits.[175] In addition, MSV contended that METs manufactured less than one year after the effective date of an Order adopting these new limits should be grandfathered indefinitely.

106. It should be possible for L-band METs to meet these new limits without significant effort since their assigned transmission frequencies are separated by a significant margin from the 1610 MHz band edge. Further, we note that the other L-band operators did not object to these proposed limits, and that NTIA claims that these levels are necessary to protect the GNSS systems. We therefore disagree that these limits are not appropriate. We have established less restrictive emission limits for Big LEO METs because those must operate in the frequency band immediately above 1610 MHz and it is infeasible for them to have more restrictive limits than proposed. Adopting the limits recommended by the ITU will promote harmonization of national technical standards and facilitate global roaming of METs. Therefore, we are adopting the proposed emission limits for all Big LEO, L-band, and 2 GHz METs.

107. We received no comments supporting or objecting to MSV's request to grandfather previously-operational L-band METs. For the reasons stated above, we will apply the same methodology to the grandfathering of non-compliant METs as for the carrier-off limits and the limits on wideband emissions from L-band transceivers in the 1605-1610 MHz segment. That is, we will apply these limits to the L-band METs manufactured six months or more after the Federal Register publication of the rule changes adopted by this order and grandfather all L-band METs manufactured prior to then.

C. Measurement Issues

108. In the first Report and Order in this proceeding, we adopted general procedures for conducting measurements for verification of compliance with both wideband and narrowband out-of-band emission limits for all METs. We prescribed a measurement interval of 20 milliseconds, as specified in ITU-R Recommendation M.1343, but invited further comment on the advisability of prescribing a two millisecond measurement interval, instead, which the NTIA advocated in its comments on the original NPRM. We also sought comment on whether the Commission should specify a particular type of measurement detector since the measurement result depends on the detector function selected.

1. Two Millisecond Measurement Interval

109. The Commission tentatively concluded in the FNPRM that, as recommended by the

[174] *See* Comments of INMARSAT at 8.

[175] Mobile Satellite Ventures subsidiary LLC ("MSV") Comments at 6.

NTIA, specifying a measurement interval of two milliseconds for measuring emission limits pertaining to METs using Time Division Multiple Access ("TDMA") would ensure that the emissions are measured when a TDMA MET is transmitting. It would also simultaneously quantify the interference potential to both Global Positioning System ("GPS") and Wide Area Augmentation System ("WAAS") receivers. The Commission sought public comments on this proposal.

110. In its comments, the NTIA stated that the 20 millisecond measurement time interval in ITU Recommendation ITU-R M.1343 was based on the 50 bits/second data rate of the GPS navigation message.[176] However, the ITU did not include a provision for the WAAS signal in this recommendation because WAAS was still in the early development stages when the recommendation was debated internationally. Recommendation ITU-R M.1343 specifies that for non-continuous signals the measurement should be performed over the active part of the burst. TDMA METs transmit data by dividing the channel into time slots with "on-time" transmission bursts and "off-time" intervals. The NTIA contended that the emissions should be measured only during an on-time active transmission timeslot and should not include an off-time interval. The NTIA also asserted that in order to properly assess the potential for interference, the MET emissions should be measured over a time interval that is related to the bit duration of the GPS and WAAS signals. This would be consistent with the approach used in ITU-R Recommendation ITU-R M.1343 to establish the measurement time interval. However, the WAAS signal is modulated with data using a symbol rate of 500 bits/second, which has corresponding bit duration of two milliseconds (1/500). Accordingly, the NTIA recommended that the Commission specify a measurement time interval of two milliseconds for all MET out-of-band emission measurements in the 1559-1605 MHz band.[177]

111. We agree with NTIA that a measurement interval of two milliseconds for all METs would simplify compliance measurements, ensure that the emissions are measured when the MET is transmitting, and accurately quantify the interference potential to both GPS and WAAS receivers.[178] We also believe that measuring the out-of-band emission limit in a portion of an active transmission timeslot would ensure that there exists no higher out-of-band emission. Therefore, we are specifying that all MET out-of-band emission measurements shall take place in a two milliseconds portion of an active transmission timeslot.

2. Power-density Measurement

112. The Commission invited comments as to whether wideband power-density measurements could vary significantly depending on whether a log-average, linear average, or true Root Mean Square ("RMS")[179] detector is used. It also asked whether the Commission should prescribe use of a particular type of detector for testing for compliance with the wideband emission limits.

113. In its comments the NTIA contended that the Commission should require both wideband and narrowband emissions to be measured with an RMS detector,[180] since the measurements result will

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176 NTIA Comments at 3.

177 *Id.* at 6-8.

178 No other comments were received on this proposal.

179 If $x_1, x_2, ..., x_n$ are real numbers, the Root-Mean-Square is defined as the square root of the sum of squared numbers divided by the number of numbers shown as: $R(x_1, x_2, ..., x_n) = \sqrt{\frac{x^2{}_1 + x^2{}_2 + ... + x^2{}_n}{n}}$

180 NTIA Comments at 9.

depend on the detector function selected and the interference impact to GPS receivers is quantified in terms of average power. The NTIA asserted that only a RMS detector will consistently measure the true average power of the emission level. Because the RMS detector function relates to the "voltage-squared" values of the time waveform, it tends to be more affected by the higher signal levels of the waveform.[181] The NTIA claimed that if the choice of the detector used is left open to the user of the specification, the result would depend on the detector chosen and that such variation is clearly not acceptable for performing compliance measurements. Accordingly, the NTIA recommended that the Commission specify an RMS detector for the emission limit measurement for MSS METs. The specification of an RMS detector should be applicable to the wideband and narrowband emission limits in the 1559-1605 MHz band for both the carrier-on and carrier-off states of the MSS MET.

114. We received no other comment on this issue. We agree with the NTIA that we should avoid variation in the compliance measurements to increase repeatability. We also agree with NTIA that using different detectors can result in different values and that the RMS detector will consistently measure emission levels for both narrowband and wideband emissions. Therefore, we are specifying an RMS detector for all power density measurements for MSS METs.

D. Compliance Deadlines for Inmarsat Standard A and B Maritime Terminals

115. In comments on the NPRM, Inmarsat argued for indefinite grandfathering of Inmarsat METS currently in service because of the difficulty of retrofitting noncompliant Inmarsat terminals to meet the "-70/-80" limits by January 1, 2005. The Commission concluded in the first Report and Order that Inmarsat's argument was insufficient to justify a permanent exemption. Noting, however, that many cargo ships carry Inmarsat Standard A terminals to comply with the Global Maritime Distress and Safety System ("GMDSS") requirements, the Commission refrained from specifying a deadline for Standard A ship terminals pending further consideration, in order to avoid potential disruption of maritime safety services. The Commission invited public comments as to an appropriate future date for that deadline.

116. In its comments on the FNPRM, Inmarsat asked the Commission to set December 31, 2007 as the compliance deadline for Inmarsat-A METs.[182] Inmarsat pointed out that it had already announced that Inmarsat-A services would be terminated as of December 31, 2007. It asserted that if the Commission set the same date as the compliance deadline for Inmarsat-A terminals those terminals could be removed from service in an organized manner and service disruption would be avoided. In reply comments Stratos Communications supported Inmarsat's proposal to set the compliance deadline for Inmarsat A terminals at December 31, 2007.[183] We received no other comments on point.

117. We find the comments of Inmarsat and Stratos concerning the deadline to be reasonable. Since Inmarsat has announced that Inmarsat-A services will be terminated as of December 31, 2007, we agree that setting an earlier deadline might cause disruption to maritime safety services, and the potential of interference in the interim is low. Therefore, in order to avoid potential disruption of maritime safety services and allow Inmarsat-A terminals to be removed in an organized manner we are setting December 31, 2007 as the compliance deadline for Inmarsat-A METs

[181] According to NTIA, the logarithmic average detector function gives greatest weight to the relatively lower values in the time waveform and thus discounts voltage peaks or spikes. On the other hand, the linear average detector function tends to be more affected equally by the whole range of signal values. *Id.* at 9-10.

[182] Inmarsat Ventures PLC Comments at 2 and 3.

[183] Stratos Communications, INC. Comments at 2.

118. Inmarsat filed a petition for reconsideration asking the Commission to grant a temporary exemption for Inmarsat-B terminals, as well. Inmarsat-B terminals were designed as the replacement model for Inmarsat-A maritime terminals and to likewise meet GMDSS requirements. According to Inmarsat, the cost of purchasing and installing each maritime Inmarsat-B in current use was many tens of thousands dollars and such METs have a useful economic lifetime in excess of 20 years. Inmarsat stated that tests indicated that Inmarsat-B terminals made by two of the three manufacturers of such devices would comply with the proposed "-70/-80" limits, but that Inmarsat-B terminals produced by one of the manufacturers would exceed the limit by 3 dB above 1604.5 MHz. Inmarsat maintained that there was little likelihood that interference could be caused by such "marginal" non-compliance.. Inmarsat further asserted that for ship owners to have their Standard-B METs tested for compliance and replace or retrofit the non-compliant terminals would be an enormous and time-consuming task. Inmarsat also maintained that subjecting Inmarsat-B terminals to the general compliance deadlines for METs placed in service before or after July 21, 2002 would cause the disruption of maritime safety services that the Commission sought to avoid by establishing the Inmarsat-A exemption.

119. We agree that requiring ship owners to have existing Standard-B equipment tested for compliance and replace or retrofit non-compliant terminals would be an enormous and time-consuming task given that currently there are over 11,500 Inmarsat-B maritime terminals in use by the U.S. Navy andCoast Guard, alone. We do not believe that it is necessary, in order to avoid inequity, to permanently exempt all non-compliant Inmarsat-B terminals, however, the number of which could become quite large in the absence of a relevant compliance deadline. We will temporarily grandfather all Inmarsat-B METs manufactured previously or within six months after Federal Register publication of the rule changes adopted herein, under the condition that they cause no interference to ARNS systems, and require Inmarsat-B terminals manufactured more than six months after the Federal Register publication date to meet the pertinent limits in Section 25.216. We are setting December 31, 2012 as the full-compliance deadline for grandfathered Inmarsat-B terminals.

V. CONCLUSION

120. The principal change in regulatory policy that we are effecting here is our adoption of a rule requiring test-based equipment certification of portable GMPCS transceivers prior to commercial importation or domestic marketing of such devices. As we have explained, the objective of this requirement, which will apply to devices manufactured more than one year after the release of this Order, is to prevent commercial distribution to users in the United States of transmitters that do not meet technical standards that the Commission has prescribed to prevent destructive interference and RF radiation injury. We have decided to allow travelers to bring as many as three uncertificated GMPCS transceivers into the United States as personal effects, however, thus implementing an essential recommendation of the GMPCS MoU for adoption of entry policies facilitating international transportation of GMPCS transceivers. At the same time, we are revising rule provisions pertaining to liability for violations in order to strengthen incentives for GMPCS system operators and service providers to actively prevent or discourage unlawful transceiver operation. Finally, we are revising out-of-band emission limits for MSS transceivers in several respects in order to improve interference protection for satellite radio-navigation guidance for aircraft. We believe that these rule changes will serve the public interest.

VI. PROCEDURAL MATTERS

121. *Final Regulatory Flexibility Analysis* As required by the Regulatory Flexibility Act, 5 U.S.C. § 604, the Commission has prepared a Final Regulatory Flexibility Analysis for the rule changes adopted herein. The analysis is set forth in Appendix C.

122. *Final Paperwork Reduction Act Analysis* This Report and Order requires either new or modified information collections subject to the Paperwork Reduction Act of 1995 ("PRA"), Public Law 104-13. It will be submitted to the Office of Management and Budget ("OMB") for review under Section 3507(d) of the PRA. Pursuant to its continuing effort to reduce paperwork burdens, the Commission invites OMB, the general public, and other Federal agencies to comment on the information collection(s) required by this Report and Order.

123. Public and agency comments on the request for approval of the information collection requirements are due 60 days after date of publication of this Order in the Federal Register. Comments regarding the requests for approval of the information collection should be submitted to Judy Boley Herman, Federal Communications Commission, Room 1-C804, 445 12th Street, SW, Washington, DC 20554, or via the Internet to Judith-B.Herman@fcc.gov.

124. *Further information* For general information concerning this rulemaking proceeding, contact William Bell at (202) 418-0741, or via internet at William.Bell@fcc.gov. For additional information concerning the information collection requirements in this document, contact Judith Boley Herman at 202-418-0214, or via the internet at Judith-B.Herman@fcc.gov.

VII. ORDERING CLAUSES

125. IT IS ORDERED, pursuant to Sections 4(i), 301, 302(a), 303(e), 303(f), 303(g), 303(n), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 4(i), 301, 302(a), 303(e), 303(f), 303(g), 303(n), and 303(r), that Sections 1.1307, 2.1033, 2.1204, and 25.132 of the Commission's rules ARE AMENDED as specified in Appendix B and that a new rule section 25.129, as set forth in Appendix B, IS ADOPTED, effective upon approved of information collection requirements by the Office of Management and Budget. The Commission will publish a document in the Federal Register announcing the effective date for these rule changes.

126. IT IS FURTHER ORDERED pursuant to Sections 4(i), 301, 303(c), 303(e), 303(f), 303(g), 303(n), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 4(i), 301, 303(c), 303(e), 303(f), 303(g), 303(n), and 303(r), that Sections 25.135, 25.136, 25.138, and 25.216 of the Commission's rules ARE AMENDED as specified in Appendix B, effective thirty days after publication of this order in the Federal Register.

127. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Second Report and Order, including the Final Regulatory Flexibility analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A: Participants

Response to GMPCS rules and policies proposed in the 1999 NPRM

Comments

AMSC Subsidiary Corp.
The Boeing Company
COMSAT Corp.
Constellation Communications, Inc.
ICO Global Communications
Iridium LLC
Iridium North America
Leo One USA Corp.
L/Q Licensee, Inc., Globalstar, L.P., and Airtouch Satellite Services U.S., Inc.
Ministry of Ports and Telecommunications of Japan
Motorola, Inc.
National Telecommunications and Information Administration
Orbital Communications Corp.
Satellite Industry Association
Skybridge LLC
Teledesic LLC

Reply comments

AMSC Subsidiary Corp.
Constellation Communications, Inc.
Cornell University
Inmarsat, Ltd.
Iridium LLC
Motorola, Inc.
National Telecommunications and Information Administration
Satellite Industry Association
Teledesic LLC
TMI Communications and Co., Ltd.

Response to Further NPRM on out-of-band emissions limits

Inmarsat Ventures, PLC (petition for reconsideration and comments)
Mobile Satellite Ventures Subsidiary LLC (comments)
National Telecommunications and Information Administration (comments)
Stratos Communications, Inc. (reply comments)

APPENDIX B: Rule Changes

I. Rule Changes Pertaining to Equipment Authorization, Importation, and Licensing of Portable Earth-Station Transceivers

Title 47 of the Code of Federal Regulations, Part 1, is amended as follows:

1. Scction 1.1307 is amended by inserting the following text after the third sentence in Paragraph (b):

§1.1307 Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.

* * * *

(b) * * *

Such compliance statements may be omitted from license applications for transceivers subject to the certification requirement in §25.129.

Title 47 of the Code of Federal Regulations, Part 2, is amended as follows:

1. Section 2.1033 is amended by inserting a new subparagraph (18) in Paragraph (c):

§2.1033 Application for certification

* * * *

(c) * * *

* * * *

(18) Applications for certification required by §25.129 shall include any additional equipment test data required by that section.

2. Section 2.1204 is amended by inserting a new subparagraph (10) in Paragraph (a):

§2.1204 Import Conditions

(a) * * *

* * * * *

(10) Three or fewer portable earth-station transceivers, as defined in §25.129, are being imported by a traveler as personal effects and will not be offered for sale or lease in the United States.

Title 47 of the Code of Federal Regulations, Part 25, is amended as follows:

PART 25 – SATELLITE COMMUNICATIONS

1. The authority citation for Part 25 continues to read as follows:

AUTHORITY: 47 U.S.C. 701-744. Interprets or applies Sections 4, 301, 302, 303, 307, 309 and 332 of the Communications Act, as amended, 47 U.S.C. Sections 154, 301, 302, 303, 307, 309 and 332, unless otherwise noted.

2. A new Section 25.129 is added and reads as follows:

§25.129 Equipment authorization for portable earth-station transceivers

(a) Except as expressly permitted by §2.803 or §2.1204, prior authorization must be obtained pursuant to the equipment certification procedure in Part 2, Subpart J of this chapter for importation,

sale or lease in the United States, or offer, shipment, or distribution for sale or lease in the United States of portable earth-station transceivers subject to regulation under Part 25. This requirement does not apply, however, to devices imported, sold, leased, or offered, shipped, or distributed for sale or lease before November 20, 2004.

(b) For purposes of this section, an earth-station transceiver is portable if it is a "portable device" as defined in §2.1093(b), *i.e.*, if its radiating structure(s) would be within 20 centimeters of the operator's body when the transceiver is in operation.

(c) In addition to the information required by §1.1307(b) and §2.1033(c), applicants for certification required by this section shall submit any additional equipment test data necessary to demonstrate compliance with pertinent standards for transmitter performance prescribed in §25.138, §25.202(f), §25.204, §25.209, and §25.216 and shall submit the statements required by §2.1093(c).

(d) Applicants for certification required by this section must submit evidence that the devices in question are designed for use with a satellite system that may lawfully provide service to users in the United States pursuant to an FCC license or order reserving spectrum.

3. Section 25.132 is amended by revising the first sentence of Paragraph (a) to read as follows:

§25.132 Verification of earth station antenna performance standards

(a) All applications for transmitting earth stations in the C and Ku-bands not subject to the certification requirement in §25.129 must be accompanied by a certificate pursuant to §2.902 of this chapter from the manufacturer of each antenna that the results of a series of radiation pattern tests performed on representative equipment in representative configurations by the manufacturer which demonstrates that the equipment complies with the performance standards set forth in §25.209.
* * * *

4. Section 25.135 is amended by revising Paragraphs (c) and (d) to read as follows:

§25.135 Licensing provisions for earth station networks in the non-voice, non-geostationary mobile-satellite service

* * * *

(c) Transceiver units in this service are authorized to communicate with and through U.S. authorized space stations only. No person without an FCC license for such operation may transmit to a space station in this service from anywhere in the United States except to receive service from the holder of a pertinent FCC blanket license or from another party with the permission of such a blanket licensee.

(d) The holder of an FCC blanket license for operation of transceivers for communication via a non-voice, non-geostationary mobile-satellite system shall be responsible for operation of any such transceiver to receive service provided by the blanket licensee or provided by another party with the blanket licensee's consent. Operators of non-voice, non-geostationary mobile-satellite systems shall not transmit communications to or from user transceivers in the United States unless such communications are authorized under a service contract with the holder of a pertinent FCC blanket license or under a service contract another party with authority for such transceiver operation delegated by such a blanket licensee.

5. Section 25.136 is amended by revising the caption and Paragraphs (b) and (c) to read as follows:

§25.136 Licensing provisions for user transceivers in the 1.6/2.4 GHz, 1.5/1.6 GHz, and 2 GHz Mobile Satellite Services

* * * *

(b) No person without an FCC license for such operation may transmit to a space station in this

service from anywhere in the United States except to receive service from the holder of a pertinent FCC blanket license or from another party with the permission of such a blanket licensee.

(c) The holder of an FCC blanket license for operation of transceivers for communication via a 1.6/2.4 GHz, 1.5/1.6 GHz, or 2 GHz Mobile Satellite Service system shall be responsible for operation of any such transceiver to receive service provided by that licensee or provided by another party with the blanket licensee's consent. Operators of such satellite systems shall not transmit communications to or from user transceivers in the United States unless such communications are authorized under a service contract with the holder of a pertinent FCC blanket license for transceiver operation or under a service contract with another party with authority for such transmission delegated by such a blanket licensee.

6. Section 25.138 is amended by adding the following text to Paragraph (f):

§25.138 Blanket licensing provisions of GSO FSS Earth Stations in the 18.3-18.8 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space), and 29.25-30.0 GHz (Earth-to-space) bands.

* * * *

(f) * * *

The holder of an FCC blanket license pursuant to this section shall be responsible for operation of any transceiver to receive GSO FSS service provided by that licensee or provided by another party with the blanket licensee's consent. Operators of GSO FSS systems shall not transmit communications to or from user transceivers in the United States unless such communications are authorized under a service contract with the holder of a pertinent FCC blanket license or under a service contract with another party with authority for such transceiver operation delegated by such a blanket licensee.

II. Rule Changes Pertaining to Emission Limits for MSS Transceivers

Title 47 of the Code of Federal Regulations, Part 25, is amended as follows:

1. Paragraph (a) of Section 25.216 is amended to read as follows:

§25.216 Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service.

(a) The e.i.r.p. density of emissions from mobile earth stations placed in service on or before July 21, 2002 with assigned uplink frequencies between 1610 MHz and 1660.5 MHz shall not exceed -70 dBW/MHz, averaged over any 2 millisecond active transmission interval, in the band 1559-1587.42 MHz. The e.i.r.p. of discrete emissions of less than 700 Hz bandwidth generated by such stations shall not exceed -80 dBW, averaged over any 2 millisecond active transmission interval, in that band.

2. Paragraph (b) of Section 25.216 is amended to read as follows:

(b) The e.i.r.p. density of emissions from mobile earth stations placed in service on or before July 21, 2002 with assigned uplink frequencies between 1610 MHz and 1626.5 MHz shall not exceed -64 dBW/MHz, averaged over any 2 millisecond active transmission interval, in the band 1587.42-1605 MHz. The e.i.r.p. of discrete emissions of less than 700 Hz bandwidth generated by such stations shall not exceed -74 dBW, averaged over any 2 millisecond active transmission interval, in the 1587.42-1605 MHz band.

3. Paragraph (c) of Section 25.216 is amended to read as follows:

(c) The e.i.r.p. density of emissions from mobile earth stations placed in service after July 21, 2002 with assigned uplink frequencies between 1610 MHz and 1660.5 MHz shall not exceed -70

dBW/MHz, averaged over any 2 millisecond active transmission interval, in the band 1559-1605 MHz. The e.i.r.p. of discrete emissions of less than 700 Hz bandwidth from such stations shall not exceed -80 dBW, averaged over any 2 millisecond active transmission interval, in the 1559-1605 MHz band.

4. Paragraph (d) of Section 25.216 is amended to read as follows:

(d) As of January 1, 2005, the e.i.r.p. density of emissions from mobile earth stations placed in service on or before July 21, 2002 with assigned uplink frequencies between 1610 MHz and 1660.5 MHz (except Standard A and B Inmarsat terminals used as Global Maritime Distress and Safety System ship earth stations) shall not exceed -70dBW/MHz, averaged over any 2 millisecond active transmission interval, in the 1559-1605 MHz band. The e.i.r.p. of discrete emissions of less than 700 Hz bandwidth from such stations shall not exceed -80 dBW, averaged over any 2 millisecond active transmission interval, in the 1559-1605 MHz band. Standard A Inmarsat terminals used as Global Maritime Distress and Safety System ship earth stations that do not meet the e.i.r.p. density limits specified in this paragraph may continue operation until December 31, 2007. Inmarsat-B terminals manufactured more than six months after Federal Register publication of the rule changes adopted in FCC 03-283 must meet these limits. Inmarsat B terminals manufactured before then are temporarily grandfathered under the condition that no interference is caused by these terminals to aeronautical satellite radio-navigation systems. The full-compliance deadline for grandfathered Inmarsat-B terminals is December 31, 2012.

5. Paragraph (e) of Section 25.216 is amended to read as follows:

(e) The e.i.r.p density of emissions from mobile earth stations with assigned uplink frequencies between 1990 MHz and 2025 MHz shall not exceed -70 dBW/MHz, averaged over any 2 millisecond active transmission interval, in frequencies between 1559MHz and 1610 MHz. The e.i.r.p. of discrete emissions of less than 700 Hz bandwidth from such stations between 1559 MHz and 1605 MHz shall not exceed -80 dBW, averaged over any 2 millisecond active transmission interval. The e.i.r.p. of discrete emissions of less than 700 Hz bandwidth from such stations between 1605 MHz and 1610 MHz manufactured more than six months after Federal Register publication of the rule changes adopted in FCC 03-283 shall not exceed -80 dBW, averaged over any 2 millisecond active transmission interval.

6. Section 25.216 is amended by inserting the following paragraphs after Paragraph (f):

(g) Mobile earth stations manufactured more than six months after Federal Register publication of the rule changes adopted in FCC 03-283 with assigned uplink frequencies in the 1610-1626.5 MHz band shall suppress the power density of emissions in the 1605-1610 MHz band-segment to an extent determined by linear interpolation from -70 dBW/MHz at 1605 MHz to -10 dBW/MHz at 1610 MHz averaged over any 2 millisecond active transmission interval. The e.i.r.p of discrete emissions of less than 700 Hz bandwidth from such stations shall not exceed a level determined by linear interpolation from -80 dBW at 1605 MHz to -20 dBW at 1610 MHz, averaged over any 2 millisecond active transmission interval.

(h) Mobile earth stations manufactured more than six months after Federal Register publication of the rule changes adopted in FCC 03-283 with assigned uplink frequencies in the 1626.5-1660.5 MHz band shall suppress the power density of emissions in the 1605-1610 MHz band-segment to an extent determined by linear interpolation from -70 dBW/MHz at 1605 MHz to -46 dBW/MHz at 1610 MHz, averaged over any 2 millisecond active transmission interval. The e.i.r.p of discrete emissions of less than 700 Hz bandwidth from such stations shall not exceed a level determined by linear interpolation from -80 dBW at 1605 MHz to -56 dBW at 1610 MHz, averaged over any 2 millisecond active transmission interval.

(i) The peak e.i.r.p density of carrier-off state emissions from mobile earth stations manufactured more than six months after Federal Register publication of the rule changes adopted in FCC 03-283 with assigned uplink frequencies between 1 and 3 GHz shall not exceed -80 dBW/MHz in the 1559-1610 MHz band averaged over any 2 millisecond active transmission interval.

(j) A Root-Mean-Square detector shall be used for all power density measurements.

APPENDIX C

Final Regulatory Flexibility Analysis

1999 NPRM. The Regulatory Flexibility Act of 1980, as amended (RFA),[184] requires that a regulatory flexibility analysis be prepared for notice-and-comment rule making proceedings, unless the agency certifies that "the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities."[185] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[186] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[187] A "small business concern" is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).[188]

As proposed in a Notice of Proposed Rulemaking issued in 1999, this order amends the Commission's rules to require authorization to be obtained in advance for domestic sale or lease, importation for domestic sale or lease, or offering, shipment, or distribution for domestic sale or lease of portable, land-based earth-station transceivers. The authorization procedure, which is specified in previously adopted provisions in Part 2 of the Commission's rules, requires submission of test data proving compliance with the Commission's pertinent technical requirements. The Notice of Proposed Rulemaking included an Initial Regulatory Flexibility Analysis (IRFA) pertaining to the proposed equipment-authorization requirement and invited comment on alternative authorization procedures that might minimize economic impact on small entities.[189] The comments filed did not discuss the IRFA.

To obtain authorization required under the new rules for importation, distribution, or sale of portable, land-based earth-station transceivers, test data must be submitted to prove that the devices meet pertinent technical requirements in the Commission's rules. Because such testing would be necessary in any event to ensure that the devices can be lawfully operated in compliance with existing rule requirements, we do not believe that the requirement to submit test data will have a significant adverse economic impact on anyone. We are postponing the effective date of the authorization requirement for one year, moreover, to afford adequate time in advance for obtaining such authorization and for disposing of uncertificated devices in current inventories. We therefore certify that the equipment authorization requirement established by this order will not have significant economic impact on a substantial number of small entities.

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184 The RFA, *see* 5 U.S.C. § 601 – 612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

185 5 U.S.C. § 605(b).

186 5 U.S.C. § 601(6).

187 5 U.S.C. § 601(3) (incorporating by reference the definition of "small-business concern" in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

188 15 U.S.C. § 632.

189 FCC 99-37, 14 FCC Rcd 5871 (1999) at ¶101.

2002 Further NPRM. This order also amends a rule section adopted last year in this proceeding, Section 25.216,[190] that specifies out-of-band emission limits for mobile earth-station transceivers licensed to transmit in frequencies between 1610 MHz and 1660.5 MHz or in the 2 GHz MSS band. Specifically, we amend Section 25.216 by prescribing a limit for carrier-off emissions, prescribing limits on narrowband emissions in the 1605-1610 MHz band, prescribing a stricter limit on wideband emissions in that band for transceivers with assigned frequencies between 1626.5 MHz and 1660.5 MHz, re-specifying the time interval for emission measurements, requiring use of RMS detectors for compliance testing, and specifying compliance deadlines for Inmarsat Standard-A and Standard-B terminals.

These changes were proposed in a Further Notice of Proposed Rulemaking[191] released with the order adopting Section 25.216 or in public comments filed in response thereto. As required by the RFA, the Further NPRM included an IRFA pertaining to these further rulemaking proposals.[192] The Commission sought written public comment on the proposals and on the IRFA. This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.[193]

Rulemaking Objectives

The general purposes of the amendments to Section 25.216 are to modify its provisions to better serve the objective of preventing interference with aircraft reception of satellite radio-navigation signals and establish equitable compliance deadlines for Standard A and Standard B Inmarsat earth-station transceivers.

Summary of Issues Raised by Public Comments in Response to the IRFA

No comments were filed specifically in response to the IRFA in the Further NPRM.

Description and Estimate of the Number of Small Entities to Which the New Rules Will Apply

The RFA directs agencies to describe, and, where feasible, estimate the number of, small entities that may be affected by the rules they adopt.[194] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[195] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[196] A "small business concern" is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).[197] For satellite telecommunication carriers and resellers, the SBA has established a small business size standard that excludes companies with annual

190 47 C.F.R. § 25.216.

191 FCC 02-134, 17 FCC Rcd 12941 (2002) at ¶¶ 80-87.

192 *Id.* at ¶101.

193 *See* 5 U.S.C. § 604.

194 5 U.S.C. § 604(a)(3).

195 5 U.S.C. § 601(6).

196 5 U.S.C. § 601(3) (incorporating by reference the definition of "small-business concern" in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

197 15 U.S.C. § 632.

receipts above $12.5 million.[198]

The amended emission limits in Section 25.216 directly affect parties with licenses for operation of mobile earth stations subject to those limits, including owners of maritime vessels equipped with Standard A or Standard B Inmarsat transceivers. The Commission noted in the IRFA that ten companies held relevant blanket licenses and that four of them had annual revenue in excess of $12.5 million but could not determine from available information whether any of the others were small entities.[199] We anticipate that blanket licenses will be issued within the next three years for 2 GHz MSS earth stations subject to Section 25.216, but we do not know how many of the recipients will be small entities. The SBA classifies commercial providers of water transportation (other than for sightseeing) as small entities if they have 500 or fewer employees.[200] Of 1,627 providers of non-sightseeing water transportation counted in the 1997 U.S. Census that operated throughout the year, only 157 had more than 100 employees.[201] The SBA classifies providers of sightseeing transportation by water as small entities if their annual receipts are $6 million or less.[202] Of 1,692 providers of sightseeing transportation by water counted in the 1997 census, only 32 had annual receipts in excess of $6 million.[203] Hence we assume that most owners of vessels equipped with Standard A or Standard B Inmarsat transceivers are small entities.

Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

The amended provisions of Section 25.216 do not impose reporting or recordkeeping requirements. Parties with licenses for operation of mobile earth stations subject to Section 25.216 will be obliged to ensure that the devices perform in compliance with the amended emission limits adopted in this order, however. Some licensees may find it necessary to alter, replace, or decommission equipment currently in service in order to comply with the amended limits.[204] We do not know, nor do the comments filed in this proceeding indicate, how much additional expense licensees will incur to achieve compliance with the amended limits.

Steps Taken to Minimize Economic Impact on Small Entities and Significant Alternatives Considered

The RFA requires an agency to describe any significant alternatives considered that might reduce the economic impact on small entities, such as establishing different compliance or reporting requirements or timetables that take into account the resources available to small entities; clarifying, consolidating, or simplifying such requirements for such small entities; using performance rather than design standards; or completely or partially exempting small entities from new requirements.[205]

We have considered and adopted exemptions for the benefit of ship owners – most of which, we presume, for reasons stated previously, are small entities. To minimize the impact on ship owners using

198 *See* 13 C.F.R. § 121.201, NAICS Code 513340.

199 17 FCC Rcd 12941, Appendix C, Sect. C. The Commission determined that four of the ten companies were not small entities but was unable to ascertain the status of the others.

200 *See* 13 C.F.R. § 121.201, NAICS Codes 483111-483114, 483211, and 43212.

201 U.S. Census Bureau, 1997 Economic Census, Subject Series: Transportation and Warehousing, Table 2, "Employment Size of Establishments," NAICS code 483 (issued Oct. 2000).

202 *See* 13 C.F.R. § 121.201, NAICS Code 487210.

203 U.S. Census Bureau, 1997 Economic Census, Subject Series: Transportation and Warehousing, Table 2, "Employment Size of Establishments," NAICS code 487210.

204 *See Second Report and Order*, ¶¶ 95-119, *supra*.

205 5 U.S.C. § 605(c)(1)-(4).

Inmarsat Standard A transceivers as Global Maritime Distress and Safety System ("GMDSS") stations, we exempt such devices from the requirements of Section 25.216 until December 31, 2007, the planned termination date for Standard A services. To minimize the impact on ship owners using Inmarsat Standard B transceivers as GMDSS stations, we exempt such transceivers manufactured previously or within six months hereafter from pertinent Section 25.216 limits until December 31, 2012, subject to a no-interference condition.

Report to Congress: The Commission will send a copy of this order, including the final analysis in this appendix, in a report to Congress pursuant to the Congressional Review Act.[206] In addition, the Commission will send a copy of this order, including this appendix, to the Chief Counsel for Advocacy of the SBA. A copy of the order, including the final regulatory flexibility analysis, will also be published in the Federal Register.[207]

[206] 5 U.S.C. § 801(a)(1)(A).

[207] *See* 5 U.S.C. § 604(b).